U.S. Department of the Interior
Bureau of Land Management

Idaho State Office
1387 S. Vinnell Way
Boise, Idaho 83709

December 2025

Greater Sage-Grouse Rangewide Planning

Record of Decision and Approved Resource Management Plan Amendment for Idaho

Appendix 1

Table and Maps

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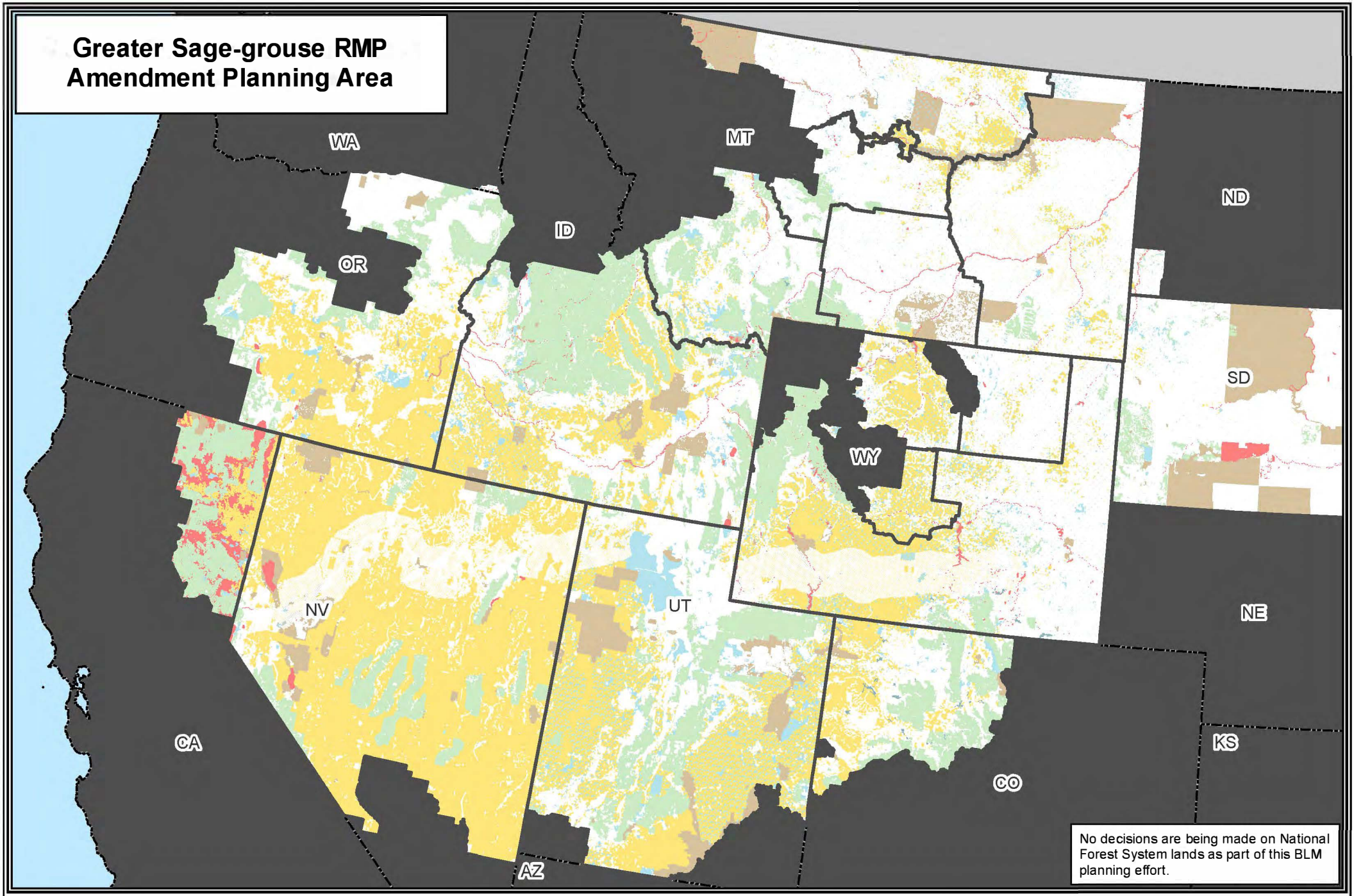
Appendix 1. Table and Maps

TABLE 1. HABITAT MANAGEMENT AREA ACREAGE.

Acreage estimates include BLM administered surface acres (BLM Surface) and BLM administered subsurface acres where the subsurface acreage is overlaid by non-BLM surface (BLM Split-estate) calculated in International Acres (rounded to nearest thousand) in the North American Datum 1983 Albers projected coordinate system.

Habitat Management Area	BLM Surface	BLM Split-estate
Priority Habitat Management Area (PHMA)	4,591,000	614,000
Important Habitat Management Area (IHMA)	2,524,000	557,000
General Habitat Management Area (GHMA)	1,696,000	803,000
Total	8,810,000	1,975,000



Map 1

Legend

- Planning Area Extent
- State Boundaries
- Bureau of Land Management
- US Forest Service
- Other Federal Lands
- State
- Private
- Local Government
- Other / Unknown

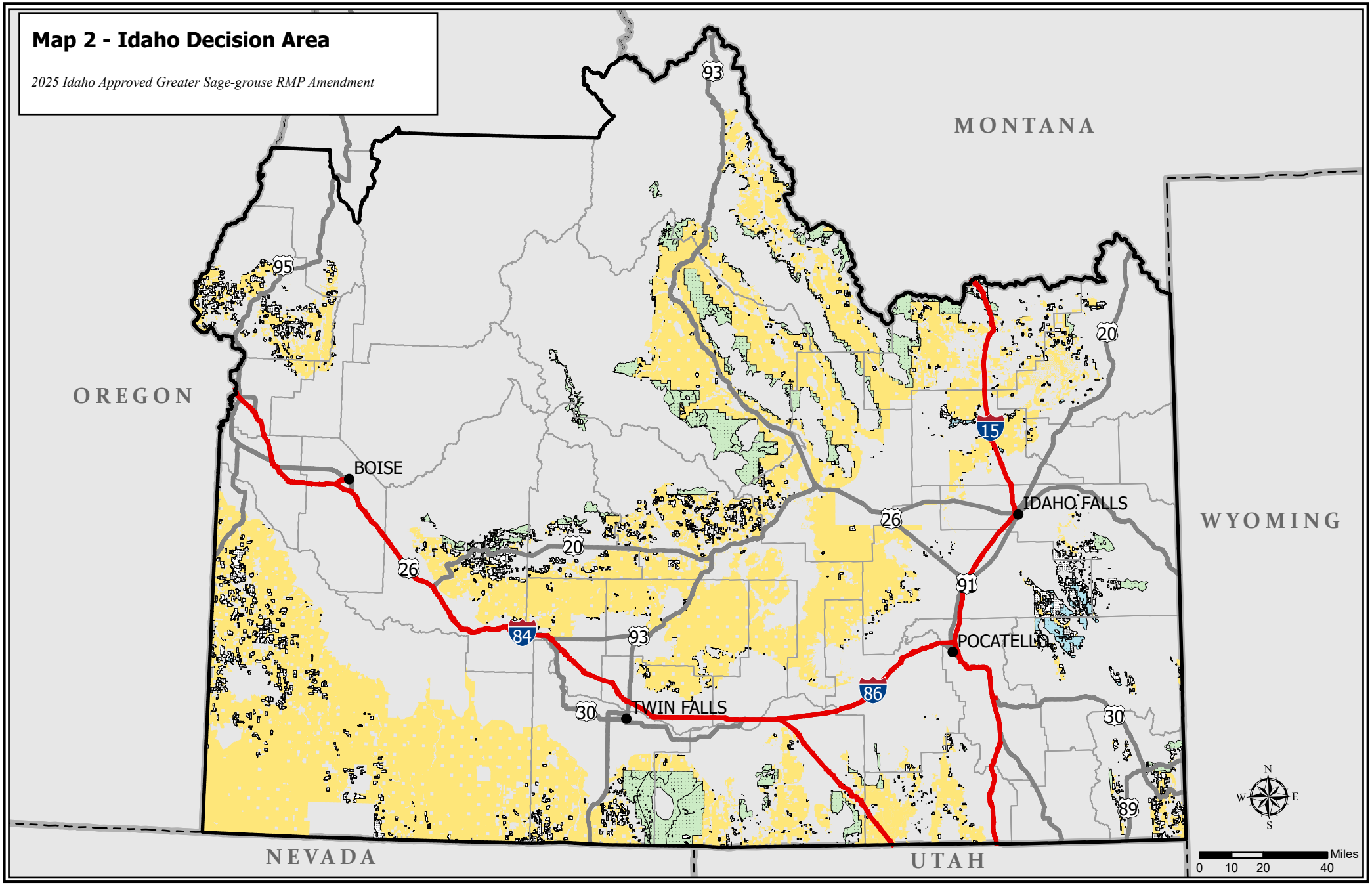
N W E S

0 25 50 100 Miles

No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

Map 2 - Idaho Decision Area

2025 Idaho Approved Greater Sage-grouse RMP Amendment



This map is provided for illustrative purposes. For the applicable management direction, see the 2025 Idaho Approved RMP Amendment.

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Legend

- Planning Boundary
- County Boundary
- State Boundary
- BLM Surface/Subsurface

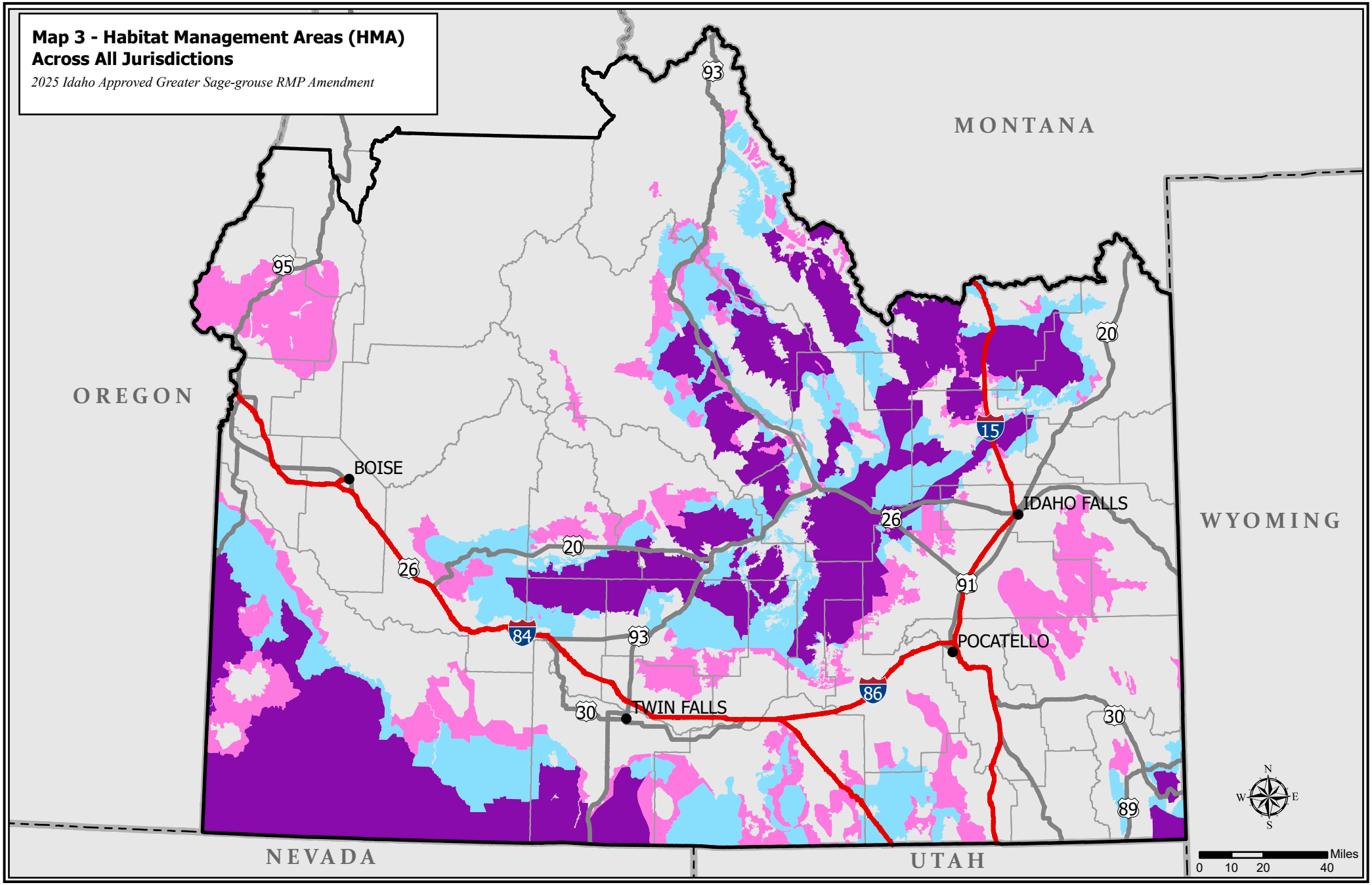
Split Estate

- USFS Surface, BLM Subsurface
- State Surface, BLM Subsurface
- Private Surface, BLM Subsurface

The Approved RMP Amendment applies to areas within GRSG Habitat Management Areas (HMA) where BLM administers the lands including areas where BLM administers subsurface split estate minerals.

Map 3 - Habitat Management Areas (HMA) Across All Jurisdictions

2025 Idaho Approved Greater Sage-grouse RMP Amendment



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Legend

- Planning Boundary
- County Boundary
- State Boundary

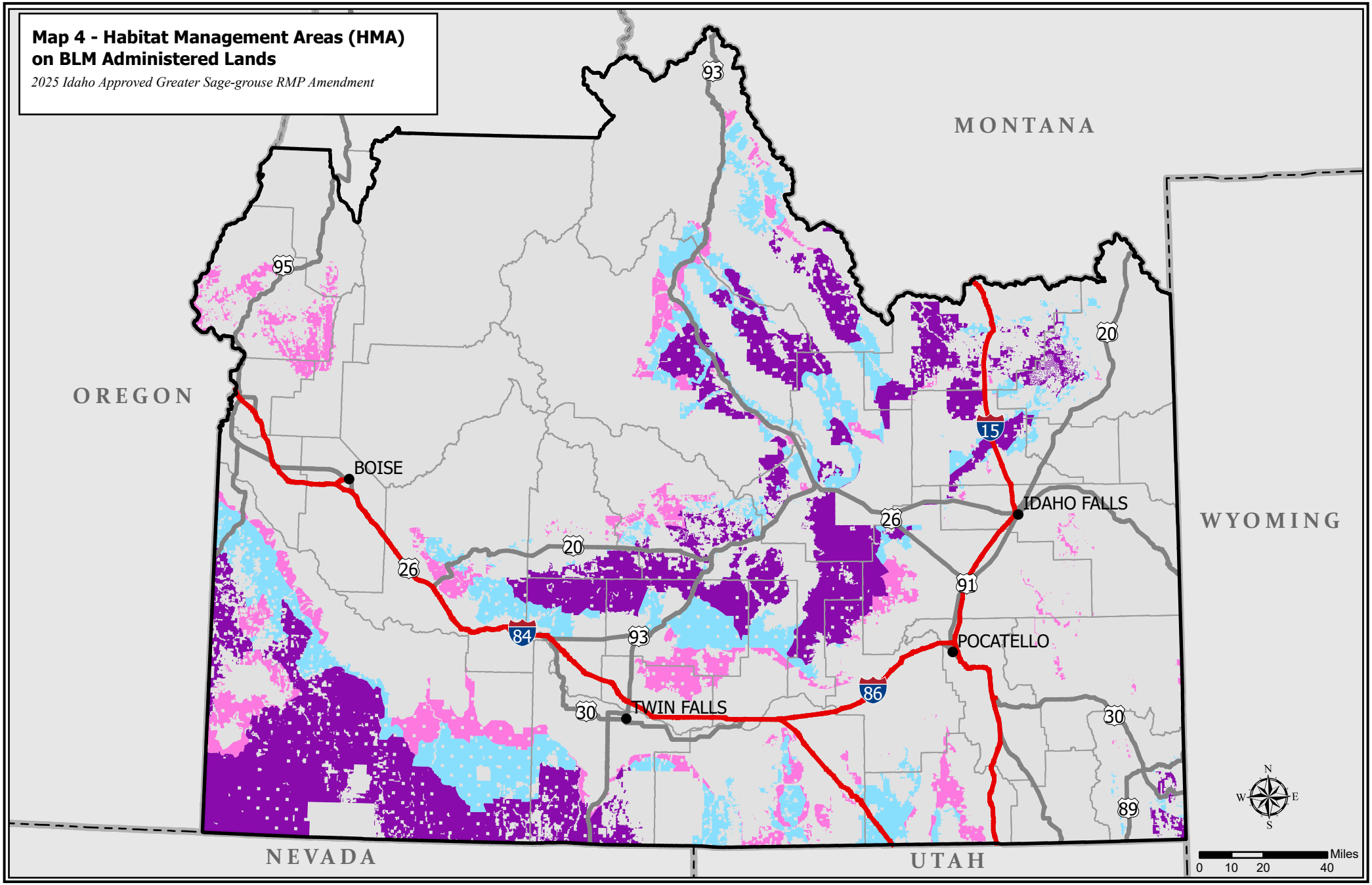
Habitat Management Areas (HMA)

- Priority HMA
- Important HMA
- General HMA

The Approved RMP Amendment applies to areas within GRSG Habitat Management Areas (HMA) where BLM administers the lands including areas where BLM administers subsurface split estate minerals.

Map 4 - Habitat Management Areas (HMA) on BLM Administered Lands

2025 Idaho Approved Greater Sage-grouse RMP Amendment



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Legend

- Planning Boundary
- County Boundary
- State Boundary

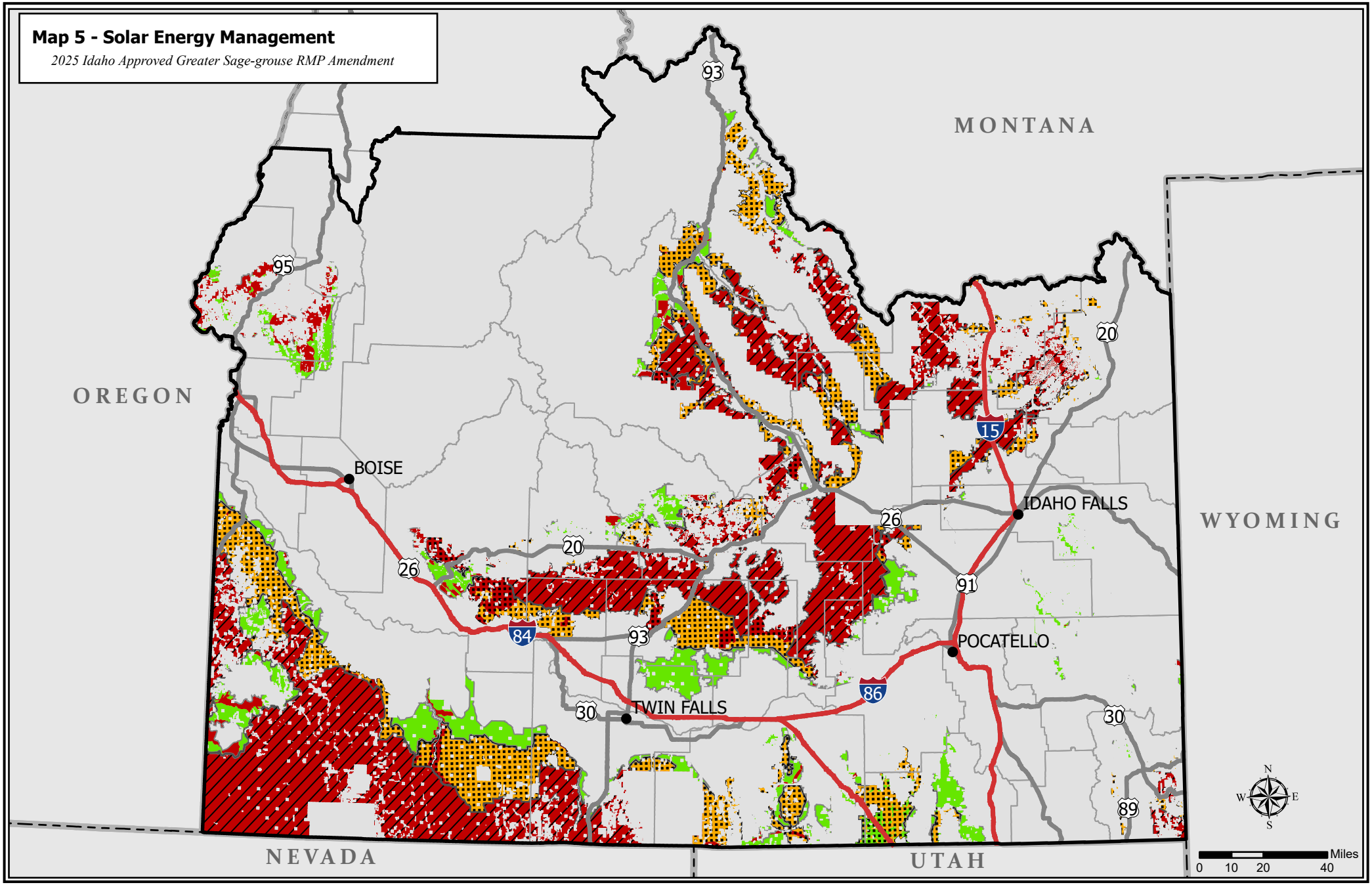
Habitat Management Areas (HMA)

- Priority HMA
- Important HMA
- General HMA

The Approved RMP Amendment applies to areas within GRSG Habitat Management Areas (HMA) where BLM administers the lands including areas where BLM administers subsurface split estate minerals.

Map 5 - Solar Energy Management

2025 Idaho Approved Greater Sage-grouse RMP Amendment



This map is provided for illustrative purposes. For the applicable management direction, see the 2025 Idaho Approved RMP Amendment.

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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

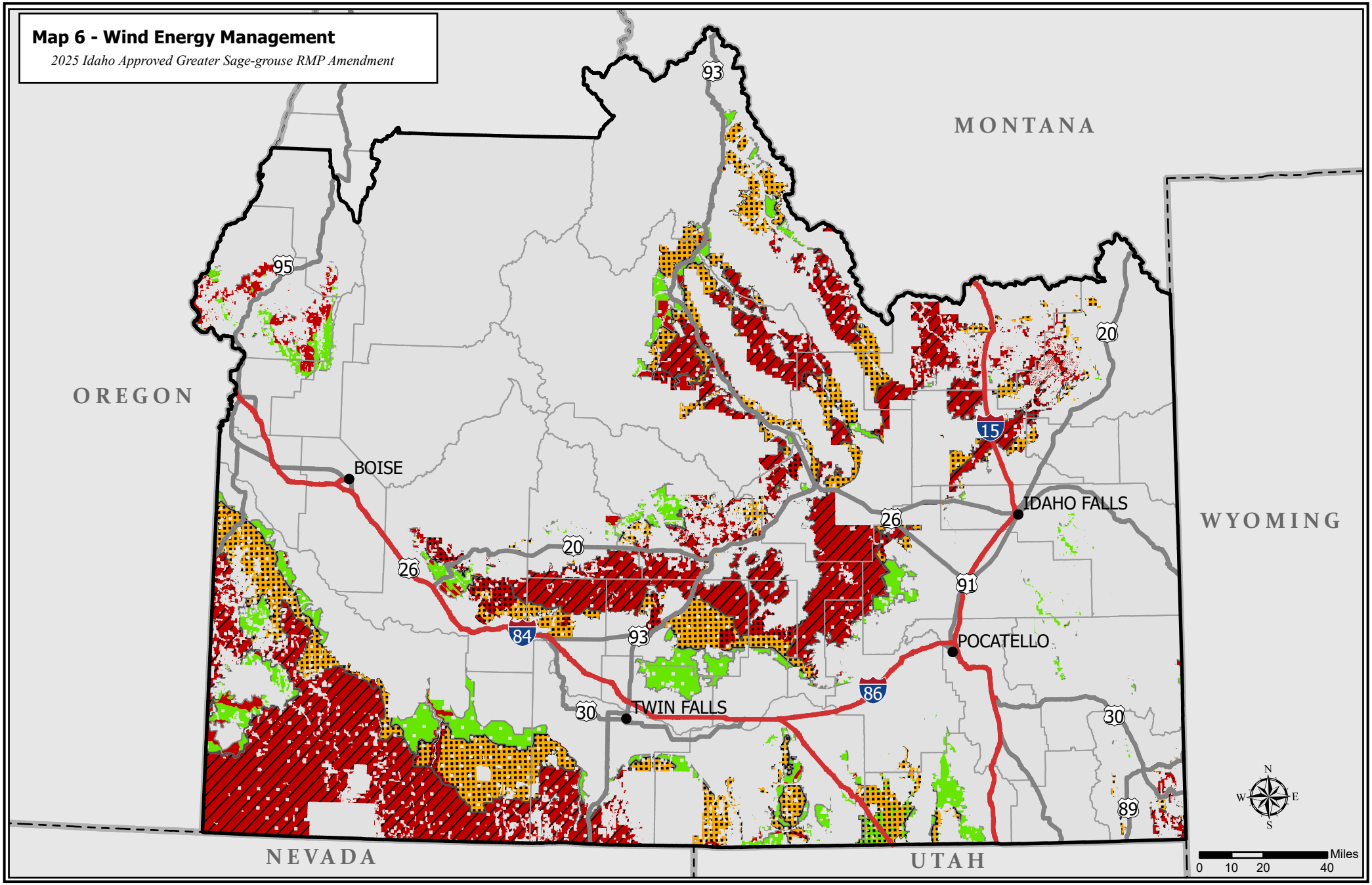
Solar Energy

- Exclusion
- Avoidance
- Open

This map includes solar energy management allocations within HMA that are more restrictive than those designated by this 2025 Idaho Approved RMP Amendment. These more restrictive existing allocations are identified in other BLM RMPs or RMP amendments for non-Greater Sage-grouse resources and they remain in place and are not amended or vacated by the Approved RMP Amendment.

Map 6 - Wind Energy Management

2025 Idaho Approved Greater Sage-grouse RMP Amendment



This map is provided for illustrative purposes. For the applicable management direction, see the 2025 Idaho Approved RMP Amendment.

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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

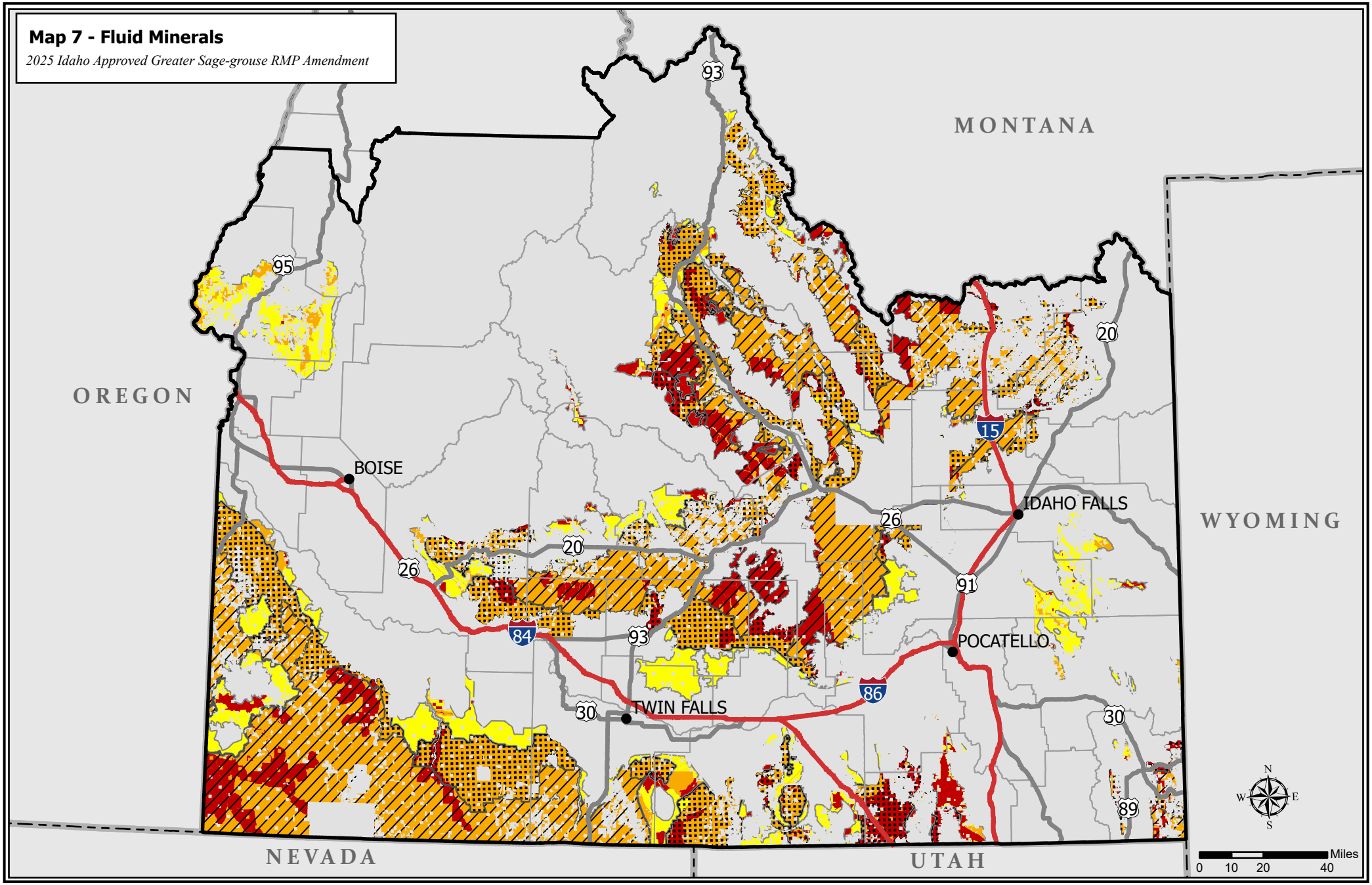
Wind Energy

- Exclusion
- Avoidance
- Open

This map includes wind energy management allocations within HMA that are more restrictive than those designated by this 2025 Idaho Approved RMP Amendment. These more restrictive existing allocations are identified in other BLM RMPs or RMP amendments for non-Greater Sage-grouse resources and they remain in place and are not amended or vacated by the Approved RMP Amendment.

Map 7 - Fluid Minerals

2025 Idaho Approved Greater Sage-grouse RMP Amendment



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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

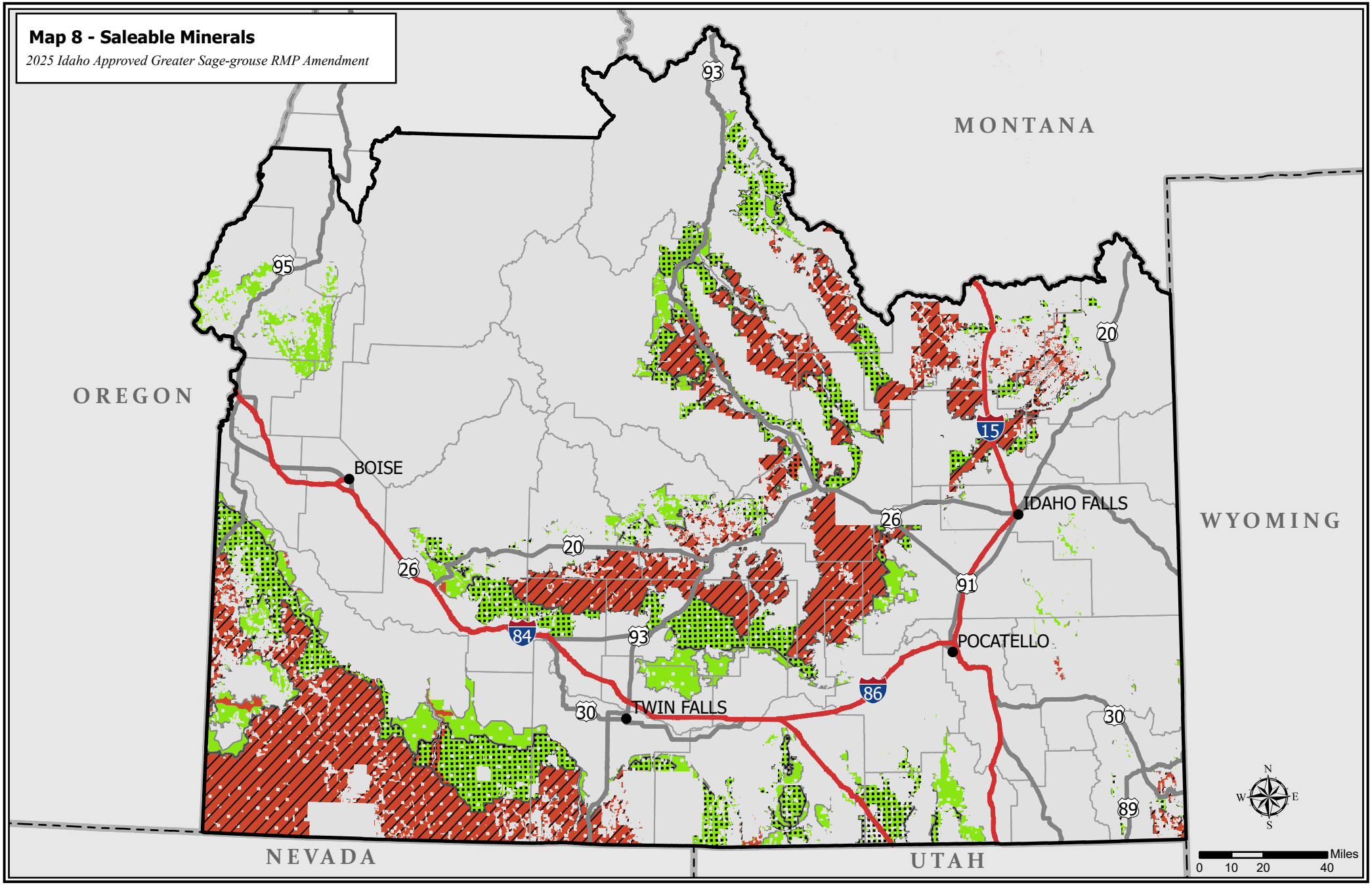
Fluid Minerals

- Closed to Leasing
- Open with Major Stipulations
- Open with Moderate Stipulations

This map includes fluid minerals allocations within HMA that are more restrictive than those designated by this 2025 Idaho Approved RMP Amendment. These more restrictive existing allocations are identified in other BLM RMPs or RMP amendments for non-Greater Sage-grouse resources and they remain in place and are not amended or vacated by the Approved RMP Amendment.

Map 8 - Saleable Minerals

2025 Idaho Approved Greater Sage-grouse RMP Amendment



This map is provided for illustrative purposes. For the applicable management direction, see the 2025 Idaho Approved RMP Amendment.

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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

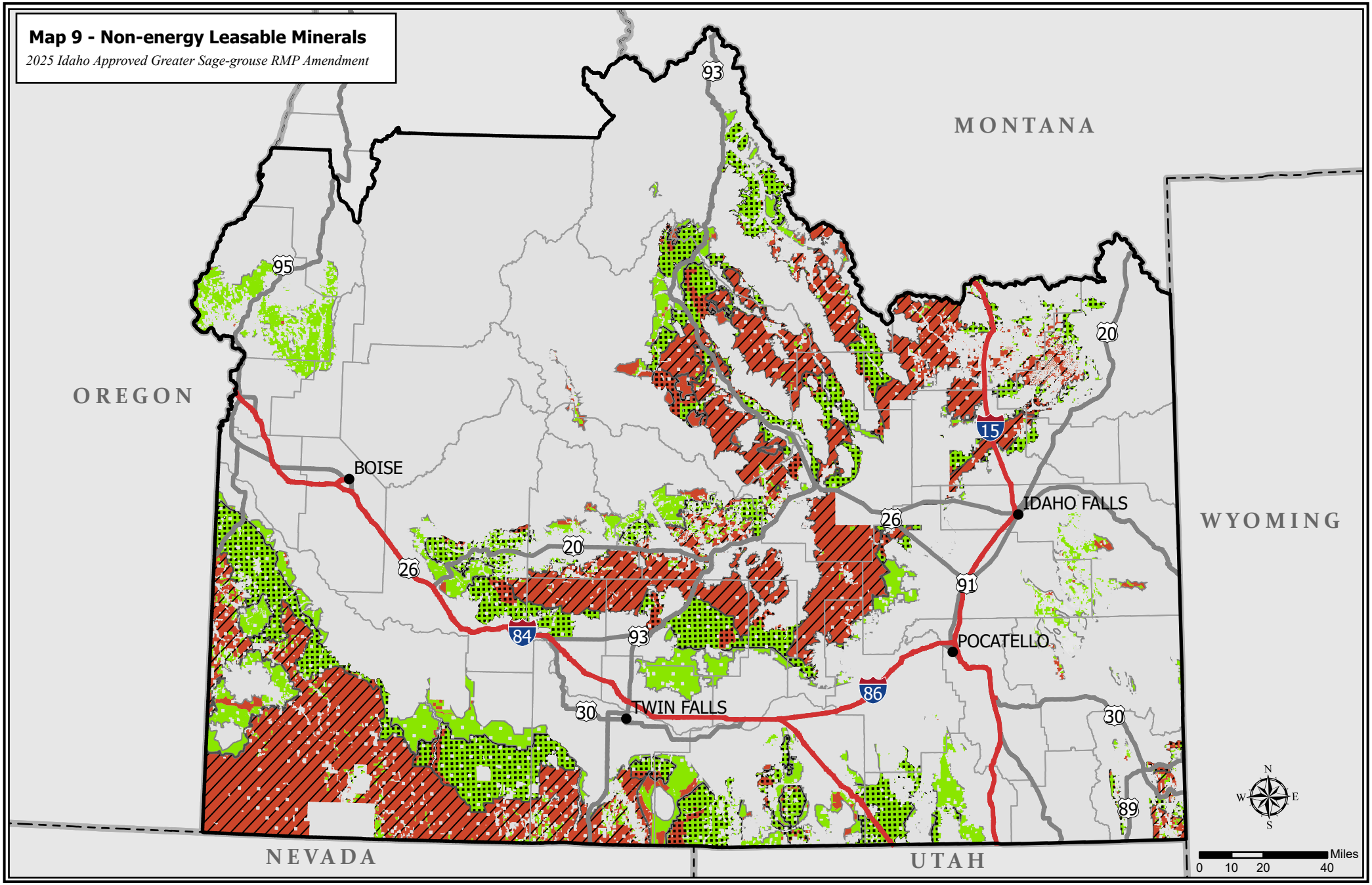
Saleable Minerals

- Closed
- Open

This map includes saleable minerals allocations within HMA that are more restrictive than those designated by this 2025 Idaho Approved RMP Amendment. These more restrictive existing allocations are identified in other BLM RMPs or RMP amendments for non-Greater Sage-grouse resources and they remain in place and are not amended or vacated by the Approved RMP Amendment.

Map 9 - Non-energy Leasable Minerals

2025 Idaho Approved Greater Sage-grouse RMP Amendment



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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

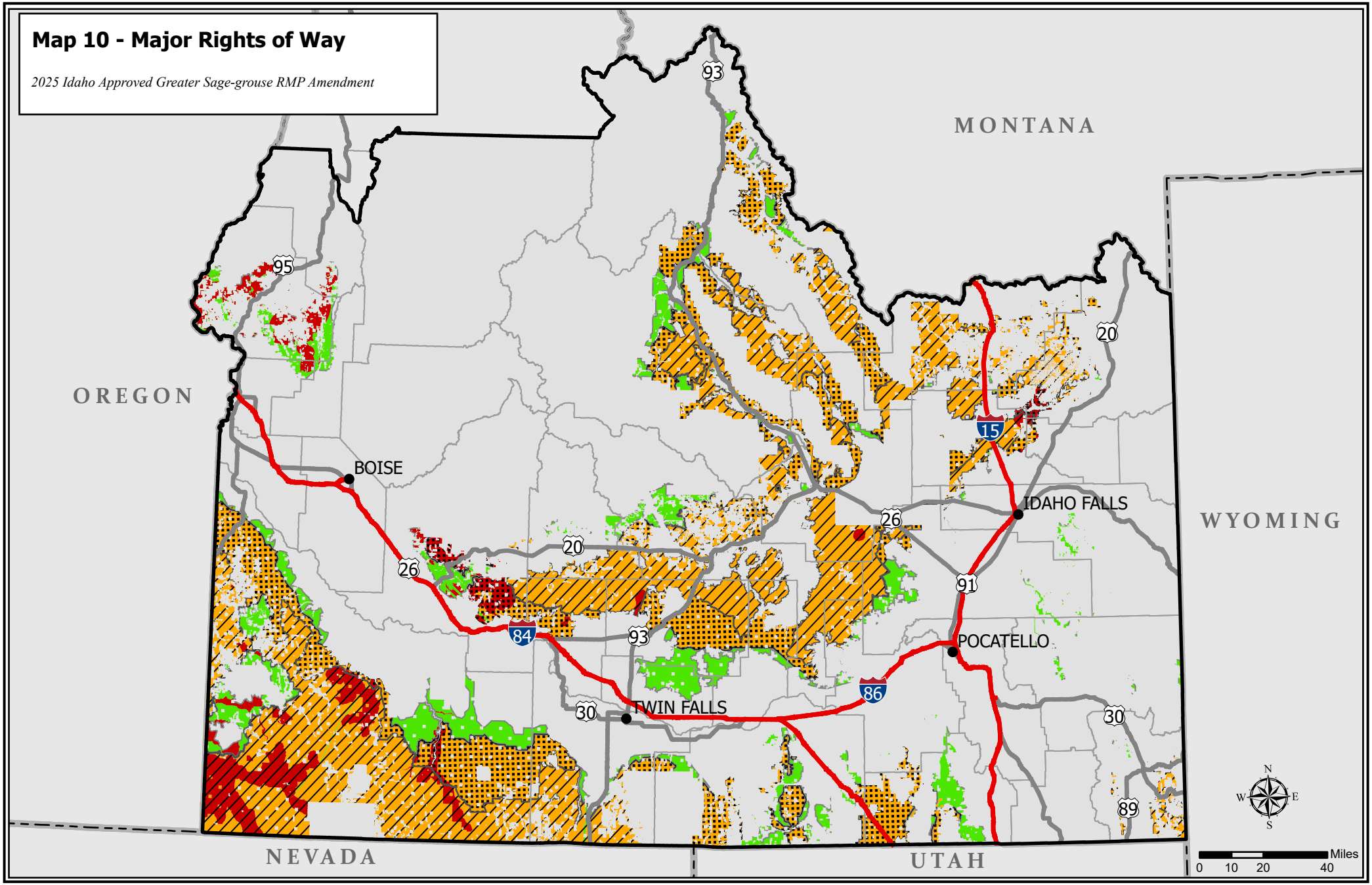
Non-energy Leasable Minerals

- Closed to Leasing
- Open

This map includes non-energy leasable minerals allocations within HMA that are more restrictive than those designated by this 2025 Idaho Approved RMP Amendment. These more restrictive existing allocations are identified in other BLM RMPs or RMP amendments for non-Greater Sage-grouse resources and they remain in place and are not amended or vacated by the Approved RMP Amendment.

Map 10 - Major Rights of Way

2025 Idaho Approved Greater Sage-grouse RMP Amendment



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Legend

- Planning Boundary
- County Boundary
- State Boundary
- Priority HMA
- Important HMA
- General HMA

Major ROW

- Exclusion
- Avoidance
- Open

The Approved RMP Amendment applies to areas within GRSG Habitat Management Areas (HMA) where BLM administers the lands including areas where BLM administers subsurface split estate minerals.

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Appendix 2

Comparison of Prior Greater Sage-Grouse RMP Management Direction with Approved RMP Amendment

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Appendix 2. Comparison of Prior Greater Sage-Grouse RMP Management Direction with Approved RMP Amendment

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
SPECIAL STATUS SPECIES (SSS)	***SPECIAL STATUS SPECIES (SSS)***	—
GOAL:	**GOAL:**	—
Goal SSS 1: Maintain and/or increase the abundance, distribution and connectivity of GRSG by conserving, enhancing or restoring GRSG habitat to maintain resilient populations by reducing, eliminating or minimizing threats to GRSG habitats.	Same as 2015	Completely Revised
Goal SSS 2: Provide for the needs of GRSG and their habitat while also providing for resource uses in accordance with BLM's direction for multiple use and sustained yield as described in FLPMA.	Same as 2015	No change (same as 2015)
Goal SSS 3: Manage anthropogenic development and human disturbance to minimize the likelihood of adverse population level effects on GRSG.	Same as 2015	No change (same as 2015)
Goal SSS 4: Reduce the risk of West Nile Virus or other disease outbreaks from BLM management actions.	Same as 2015	No change (same as 2015)
Goal SSS 5: Conserve, enhance, and restore the sagebrush ecosystem upon which GRSG populations depend on in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners.	Same as 2015	Completely Revised
Objective SSS 1: Maintain or make progress toward all lands within PHMA and IHMA (at least 70%) capable of producing sagebrush so there is a minimum of 15 percent sagebrush cover and conifers absent to uncommon within 1.86 miles of occupied leks.	Same as 2015	No change (same as 2015)
Objectives:	**Objectives:**	—
Objective SSS 2: Incorporate GRSG Seasonal Habitat Objectives (**Table 2**), into the design of projects or activities, as appropriate, based on site conditions and ecological potential, unless achievement of fuels management objectives require additional reduction in sagebrush cover to meet strategic protection of GRSG habitat and conserve habitat quality for the species or at least one of the following conditions can be demonstrated and documented in the NEPA analysis associated with the specific project: • A specific objective is not applicable to the site-specific conditions of the project or activity; • An alternative objective is determined to provide equal or better protection for GRSG or its habitat (based on appropriate scientific findings); or • Analysis concludes that following a specific objective will provide no more protection to • GRSG or its habitat than not following it, for the project being proposed**.** • These habitat objectives in **Table 2** summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in the table were adjusted based on local science and monitoring data to define the range of characteristics used in this subregion. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by GRSG. These habitat indicators are consistent with the rangeland health indicators used by the BLM. • The habitat objectives will be part of the GRSG habitat assessment to be used during land health evaluations (see **Appendix D**, Monitoring Framework). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.	Within PHMA and IHMA, maintain large intact sagebrush steppe communities with vegetative characteristics consistent with their ecological potential such that GRSG can select suitable seasonal habitats for breeding, nesting, rearing young, and wintering. GRSG actively select suitable use areas within large intact sagebrush ecosystems. Not every site will provide for every GRSG need, which is why they require large intact sagebrush ecosystems. The desired conditions for GRSG (the Desired Conditions table (Table 2-2) in the 2015 Final EIS) are a list of indicators, characteristics, and values that describe GRSG seasonal habitat use areas. The BLM used indicator values derived from a synthesis of local and regional GRSG habitat research and data to describe the typical vegetation communities that GRSG select. While the desired conditions are not attainable on every site or every acre within designated GRSG habitat management areas, the values reflect a range of habitat conditions that generally lead to greater survival of individuals within a population. When permitting land use activities, the BLM **shall** consider the ecological site potential within designated habitat management areas to validate the habitat conditions achievable for a specific site. The seasonal habitat descriptions in Table 2-2 [the Desired Conditions table in the 2015 Final EIS] vary across the range of GRSG, within a sub-region, and between sites. They are not land health standards but are quantitative measures that **help** inform the Special Status Species Habitat Land Health Standard for GRSG. These measurable values reflect ecological potential, and may be adjusted based on local factors influencing GRSG habitat selection. Local data or recent science may indicate that GRSG select for vegetation structure and composition in seasonal habitats not characterized by the values in the desired conditions table. In these cases, it may be appropriate to adjust the values. Desired Conditions should be evaluated in the context of annual variability in ecological conditions and should not be used singly to determine habitat suitability for GRSG. As appropriate**,** they may be used to demonstrate trends over time, during plan evaluations for effectiveness of GRSG conservation, or when identifying limiting habitat characteristics for a given area. The indicators, characteristics, values, and desired seasonal habitat conditions in the GRSG Plan Desired Conditions Table are meant to inform the wildlife habitat component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2), but do not	Completely Revised

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
(see above)	replace rangeland health assessments. Results from the LHS evaluation should be used to support the BLM in land use authorization processes and during development of appropriate objectives for management actions such as vegetation treatments. The Desired Conditions Tables are to be used as follows: a. To assess habitat suitability, as defined by BLM policy and the Habitat Assessment Framework, for GRSG at the appropriate scale b. To describe desired conditions that provide habitat at multiple spatial scales, as defined by the best available science c. To evaluate land use plan effectiveness for GRSG conservation d. To develop measurable project objectives for actions in BLM-designated GRSG habitat management areas, as needed, when considered alongside land health standards, ecological potential and local information.	*(see above)*
Table 2 Habitat Objectives (full table on following this table) For nesting/early brood rearing habitat: Indicator: Perennial grass (and forb) height (includes residual grasses) Desired Condition: ≥ 7 inches	**Table 3 Desired Conditions** (full table following this table; same as 2015 except) For nesting/early brood rearing habitat: Indicator: Perennial grass (and forb) height (includes residual grasses) Desired Condition: - Adequate Nesting Cover References (add): Hausleitner 2005; Holloran et al. 2005; Gibson et al. 2016; Smith et al. 2017; Smith et al. 2018	Completely Revised – refer to Appendix 4
Greater Sage-Grouse Management Areas	**2.3 GREATER SAGE-GROUSE MANAGEMENT AREAS** The boundaries of the habitat designations have been adjusted to correct administrative mapping errors that occurred when PHMA was designated in 2015. Habitat management area boundary changes also include removing some areas of non-habitat that were added to PHMA by the 2015 ROD/ARMPA as part of the SFA designations. Additionally, in the West Owyhee Conservation Area, the circle of 60,706 acres of PHMA (Brown's Creek area) that is surrounded by IHMA will be re-designated as IHMA (see Map 1); 11,828 acres of non-Greater Sage-Grouse habitat managed as PHMA, in the Mountain Valleys Conservation Area, would be changed to non-habitat (Donkey Hills ACEC and mapping errors). (See Appendix A).	Completely Revised
Objective SSS 3: Maintain a resilient population of GRSG in Idaho.	Same as 2015	No change (same as 2015)
Objective SSS 4: Designate GRSG management areas and associated management to maintain a resilient population and to designate strategically located adjacent areas to provide a buffer from unpredictable habitat loss such as wildfire to the resilient population areas.	Same as 2015	No change (same as 2015)
Objective SSS 5: Identify and strategically protect larger intact sagebrush areas and areas of lower fragmentation to maintain GRSG population persistence.	Same as 2015	No change (same as 2015)
Management Decisions (MD):	—	—
MD SSS 1: Designate four GRSG Conservation Areas (see Glossary) within the subregion to form the geographic basis for achieving population objectives; evaluating the disturbance density and adaptive regulatory triggers; and tailor adaptive management responses. These conservation areas are depicted in **Figure 2-14**. These areas are referred to as Mountain Valleys, Desert, West Owyhee, and Southern Conservation Areas. <u>Conservation Area Description</u> Mountain Valleys Conservation Area – generally located north of the Snake River Plain, including GRSG habitat in the Salmon and Challis areas, and habitat in west-central population area. It extends west from Rexburg, north and west of Highway 33 to Howe, north and west of Highway 33/22 to Arco, north and west of Highway 26/20/93 to Carey, north and west of Highway 20 west to Hill City, north and west of Highway 20 to the Dylan Karaus Road, west to Canyon Creek. Canyon Creek to the confluence with the Snake River form the western boundary. Desert Conservation Area – located north of the Snake River and south of the Mountain Valleys Conservation Area. It extends from the confluence of Canyon Creek and the Snake River, eastward to Idaho Falls. The Snake River and Henry's Fork form the eastern boundary. West Owyhee Conservation Area – located south of the Snake River and west of the Bruneau River. Southern Conservation Area – located south of the Snake River and east of the Bruneau River, including East Idaho uplands and Bear Lake Plateau, and the Utah portion of the Sawtooth National Forest in Box Elder County.	Same as 2015	Completely Revised

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
In general, GRSG habitats in the Desert and West Owyhee CAs are relatively contiguous, while those in the Mountain Valleys and Southern CAs tend to be more fragmented due to more complex topography, and elevational differences and/or effects from wildfires, agriculture, urbanization or other factors.	*(see above)*	*(see above)*
MD SSS 2: Within each Conservation Area designate GRSG Habitat Management Areas: Priority, Important and General Habitat Management Areas (**Figure 2-1**). **Priority Habitat Management Areas (PHMA**) focus on conserving the two key meta-populations in the subregion. PHMA encompasses areas with the highest conservation value to GRSG, based on the presence of larger leks, habitat extent, important movement and connectivity corridors and winter habitat. PHMA include adequate area to accommodate continuation of existing land uses and landowner activities. **Important Habitat Management Areas (IHMA)** contain additional habitat and populations that provide a management buffer for the PHMA and to connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations and in some Conservation Areas includes areas beyond those identified by USFWS as necessary to maintain redundant, representative and resilient populations (Priority Areas for Conservation (PACs)). IHMA are typically adjacent to PHMA but generally reflect somewhat lower GRSG population status and/or reduced habitat value due to disturbance, habitat fragmentation or other factors. **General Habitat Management Areas (GHMA)** encompass habitat that is outside of PHMA or IHMA. GHMA contain approximately 10 percent of the occupied leks that are also of relatively low male attendance compared to leks in PHMA or IHMA. GHMA are generally characterized by lower quality disturbed or patchy habitat of low lek connectivity.	Same as 2015	Completely Revised
MD SSS 3: Designate PHMA and IHMA to encompass 90 percent of the breeding males in Idaho.	Same as 2015	No change (same as 2015)
MD SSS 4: Annually prioritize Conservation Areas at the state scale considering results of the annual adaptive regulatory trigger evaluations relative to implementation of restoration and mitigation activities.	Same as 2015	Partially Revised
MD SSS 5: Prioritize activities and mitigation to conserve, enhance and restore GRSG habitats (i.e., fire suppression activities, fuels management activities, vegetation treatments, invasive species treatments etc.) first by Conservation Area, if appropriate (Conservation Area under adaptive management or at risk of meeting an adaptive management soft or hard trigger), followed by PHMA, then IHMA then GHMA within the Conservation Areas. Local priority areas within these areas will be further refined as a result of completing the GRSG Wildfire and Invasive Species Habitat Assessments as described in **Appendix H**. This can include projects outside GRSG habitat when those projects will provide a benefit to GRSG habitat.	Same as 2015	Partially Revised
MD SSS 6: The management area map and Biologically Significant Unit (BSU) baseline map will be re- evaluated in conjunction with plan evaluation processes (i.e. approximately every 5 years). This re- evaluation can indicate the need to adjust PHMA, IHMA or GHMA or the habitat baseline. These adjustments can occur upon completion of the appropriate analysis and process (e.g., plan amendment) to review the allocation decisions based on the map. Results from the Wildfire and Invasive Species Assessments, such as identified focal or emphasis areas will also be used to help inform mapping adjustments during this evaluation.	The management area map and Biologically Significant Unit (BSU) baseline map will be re- evaluated in conjunction with plan evaluation processes (i.e. approximately every 5 years). This re- evaluation can indicate the need to adjust Conservation Area Boundaries, PHMA, IHMA or GHMA or the habitat or the population baselines. These adjustments can occur upon completion of the appropriate analysis and process (e.g., plan maintenance in coordination with the teams identified in MD SSS 44) to review the allocation decisions based on the map. Results from the Wildfire and Invasive Species Assessments, such as identified focal or emphasis areas will also be used to help inform mapping adjustments during this evaluation.	Partially Revised
MD SSS 7: GRSG habitat within the project area will be assessed during project-level NEPA analysis within the management area designations (PHMA, IHMA, GHMA). Project proposals and their effects will be evaluated based on the habitat and values affected.	Same as 2015	No change (same as 2015)
MD SSS 8: Idaho BLM will annually update the Key Habitat map, in order to reflect habitat changes resulting from wildfire, succession, and vegetation treatments that occurred or were observed since the last update. Key habitat includes areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year. This map also identifies potential restoration areas (perennial grassland annual grasslands, conifer encroachment and recent burns). This map a broad scale current vegetation map that changes as habitat is lost or restored. The Key Habitat Map is not an allocation decision such as PHMA, IHMA, and GHMA. Updates to the map will also occur if it is determined that mapping errors or omissions have occurred, or that radio-telemetry studies indicate that GRSG are consistently	Same as 2015	Completely Revised

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
utilizing an area. Updates are also intended to capture recommendations by the field offices, GRSG Local Working Groups, or agency partners in GRSG conservation. Project-level evaluations of GRSG habitat during the NEPA process can also be used to inform the annual update.	*(see above)*	*(see above)*
MD SSS 9: Areas of habitat outside of delineated habitat management areas identified during the Key habitat update process will be evaluated during site specific NEPA for project level activities and GRSG required design features (**Appendix C**) and buffers (**Appendix B**) will be included as part of project design. These areas will be further evaluated during plan evaluation and the 5-year update to the management areas, to determine whether they should be included as PHMA, IHMA, or GHMA.	This decision has been deleted.	No change (same as 2019)
MD SSS 10: Designate Sagebrush Focal Areas (SFA) as shown on **Figure 1-2**. SFA will be managed as PHMA, with the following additional management • Recommended for withdrawal from the General Mining Act of 1872, as amended, subject to valid existing rights. • Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing. Prioritized for vegetation management and conservation actions in these areas, including, but not limited to land health assessments, wild horse and burro management actions, review of livestock grazing permits/leases, and habitat restoration (see specific management sections).	This decision has been deleted.	No change (same as 2019)
Adaptive Management	***Adaptive Management***	—
MD SSS 11: Use hard and soft population and habitat triggers to determine an appropriate management response as described in MD SSS 16 to MD SSS 26. Hard and soft triggers responses are applied at the Conservation Area (MD SSS-1) scale (**Appendix E**).	Same as 2015	Completely Revised
MD SSS 12: Utilize monitoring information collected through the Monitoring Framework (**Appendix D**) to determine when adaptive regulatory triggers have been met.	Same as 2015	Completely Revised
MD SSS 13: BLM will maintain GRSG habitat information, through use of the Key Habitat map or latest sagebrush/ vegetation map, which will be used to track and identify habitat changes to assess the habitat trigger in the adaptive management approach. Key habitat map updates are made each winter by BLM in coordination with the Forest Service and IDFG, using the process described in Appendix F of the FEIS.	Same as 2015	Completely Revised
MD SSS 14: BLM will coordinate with the IDFG regarding population information collected and maintained by the IDFG to track and identify population changes to assess the population trigger in the adaptive management approach.	Same as 2015	Completely Revised
MD SSS 15: The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD, and twice each year thereafter the applicable monitoring information will be reviewed to determine if any adaptive management triggers have been met.	The data from the lek counts and the key habitat map update will be reviewed annually to determine if any hard or soft adaptive management triggers have been met.	Completely Revised
MD SSS 16: Adaptive habitat triggers will be individually calculated across all ownerships within the BSUs (**Appendix E**). The BSU is defined as the IDFG modeled nesting and wintering habitat (IDFG 2013, unpublished data) within PHMA and IHMA within a Conservation Area. The sagebrush component of the BSU is represented by the Key habitat within the BSU present during the 2011 baseline and as mapped during subsequent annual Key habitat map updates. Key habitat is defined as areas of generally intact sagebrush that provide GRSG habitat during some portion of the year (ISAC 2006).	Same as 2015	Completely Revised
MD SSS 17: Habitat Hard Triggers are defined as: • A 20 percent loss of Key Habitat within the BSU of the PHMA of a Conservation Area when compared to the 2011 baseline, inclusive of all land ownerships or • A 20 percent loss of Key Habitat within the BSU of the IHMA of a Conservation Area when compared to the 2011 baseline.	Same as 2015	Completely Revised
MD SSS 18: Habitat Soft Triggers are defined as: • A 10 percent loss of Key Habitat within the BSU of the PHMA of a Conservation Area when compared to the 2011 baseline; or • A 10 percent loss of Key Habitat within the BSU of the IHMA of a Conservation Area when compared to the 2011 baseline.	Same as 2015	Completely Revised

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MD SSS 19: Population Hard Triggers are defined as: • A 20 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) significantly below 1.0 within PHMA within a Conservation Area over the same 3-year period; or • A 20 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) significantly below 1.0 within IHMA within a Conservation Area over the same 3-year period. • Significance is defined by the 90 percent confidence interval around the current 3-year finite rate of change. If the 90 percent confidence interval is less than, and does not include 1.0, then the finite rate of change is considered significant. The finite rate of change and variance will be calculated following Garton et al. (2011).	Same as 2015	Completely Revised
MD SSS 20: Population Soft Triggers are defined as: • A 10 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) below 1.0 within PHMA within a Conservation Area over the same 3-year period; or • A 10 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) below 1.0 within IHMA within a Conservation Area over the same 3-year period.	Population Soft Triggers are defined as: A. A 10 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) below 1.0 within PHMA within a Conservation Area over the same 3-year period; or B. A 10 percent decline in the current 3-year average of total maximum number of males counted compared to the 2011 maximum male baseline and a finite rate of change (λ) below 1.0 within IHMA within a Conservation Area over the same 3-year period. Significance for soft triggers is defined by the 90 percent confidence interval around the current 3-year finite rate of change. If the 80 percent confidence interval is less than and does not include 1.0, then the finite rate of change is considered significant. The finite rate of change and variance will be calculated following Garton et al. (2011).	Completely Revised
MD SSS 21: When any of the Criteria for Soft Triggers have been met the Implementation Team will evaluate causal factors and recommend additional potential implementation level activities (**Appendix E**).	Same as 2015	Completely Revised
MD SSS 22: When any of the Criteria for Hard Triggers have been met then all PHMA management actions will be applied to the IHMA within that Conservation Area and the Implementation Team will evaluate causal factors and recommend additional potential implementation level activities.	Same as 2015	Partially Revised- references to Conservation Areas updated to reflect evaluation areas
MD SSS 23: If an adaptive regulatory trigger is tripped and livestock grazing is identified as a probable limiting factor then adjustments will follow the Adaptive Grazing Management Response described in **Appendix E**.	Same as 2015	Completely Revised
MD SSS 24: Remove any adaptive management response when the habitat or maximum male population count (i.e., 3-year average) returns to or exceeds the 2011 baseline levels within the associated Conservation Area in accordance with the Adaptive Management Strategy (**Appendix E**). In such a case, changes in management allocations resulting from a tripped trigger will revert back to the original allocation (MD SSS 22)**.**	Remove the automatic hard trigger adaptive management response when the habitat or maximum male population count (i.e., 3-year average) returns to or exceeds the 2011 baseline levels within the associated Conservation Area, in accordance with the Adaptive Management Strategy (**Appendix E**). In such a case, changes in management allocations resulting from a tripped trigger will revert to the original allocation (MD SSS 22)**.**	Completely Revised
MD SSS 26: When a hard trigger is hit in a BSU within a PAC that has multiple BSUs, including those that cross state lines, the WAFWA Management Zone Greater Sage-Grouse Conservation Team will convene to determine the causal factor, put project-level responses in place, as appropriate and discuss further appropriate actions to be applied. The team will also investigate the status of the hard triggers in other BSUs within the PAC and will invoke the appropriate plan response.	Same as 2015	Completely Revised

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Anthropogenic Disturbance	***Anthropogenic Disturbance***	—
MD SSS 27: If the 3 percent anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG PHMA (or IHMA in Idaho) Habitat Management Areas in any given BSU, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Law of 1872, as amended, valid existing rights, etc.) will be permitted by BLM within GRSG PHMA and IHMA in any given BSU until the disturbance has been reduced to less than the cap, as measured according to the Disturbance and Adaptive Management Appendix (**Appendix E**) for the intermediate scale. For Idaho, if the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area (**Appendix E**) in a PHMA (or IHMA in Idaho), then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the General Mining Law of 1872, as amended, valid existing rights, etc.). Within existing designated utility corridors, the 3% disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. The BSU (**Figure 2-2**) is defined as the currently mapped nesting and wintering habitat within PHMA and IHMA within a Conservation Area, inclusive of all ownerships. Anthropogenic disturbance excludes habitat disturbance from wildfire and fuels management activities and includes the following developments (see **Appendix E** for further details): • Oil and Gas Wells and Development Facilities • Coal Mines • Wind Towers • Solar Fields • Geothermal Development Facilities • Mining (Active Locatable, Non-Energy Leasable and Saleable Developments) • Roads • Railroads • Power lines • Communication Towers • Other Vertical Structures • Coal bed Methane Ponds • Meteorological Towers (e.g., wind energy testing) • Nuclear Energy Facilities • Airport Facilities and Infrastructure • Military Range Facilities and Infrastructure • Hydroelectric Plants • Recreation Areas Facilities and infrastructure For Idaho this disturbance is measured by direct footprint or by ROW width for linear features (power lines, pipelines and roads). For Montana disturbance is measured similar to the Wyoming Disturbance Density Calculation Tool process described in **Appendix E**. Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the Priority Habitat Management Area within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.	If the 3 percent anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG PHMA (or IHMA in Idaho) Habitat Management Areas in any given BSU, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Law of 1872, as amended, valid existing rights, etc.) will be permitted by BLM within GRSG PHMA and IHMA in any given BSU until the disturbance has been reduced to less than the cap, as measured according to the Disturbance and Adaptive Management Appendix (**Appendix E**) for the intermediate scale. For Idaho, the BSU (**Figure 2-2**) is defined as the currently mapped nesting and wintering habitat within PHMA and IHMA within a Conservation Area, inclusive of all ownerships. Anthropogenic disturbance excludes habitat disturbance from wildfire and fuels management activities and includes the following developments (see **Appendix E** for further details): • Oil and Gas Wells and Development Facilities • Coal Mines • Wind Towers • Solar Fields • Geothermal Development Facilities • Mining (Active Locatable, Non-Energy Leasable and Salable Developments) • Roads • Railroads • Power lines • Communication Towers • Other Vertical Structures • Coal bed Methane Ponds • Meteorological Towers (e.g., wind energy testing) • Nuclear Energy Facilities • Airport Facilities and Infrastructure • Military Range Facilities and Infrastructure • Hydroelectric Plants • Recreation Areas Facilities and infrastructure This disturbance is measured by direct footprint or by the distance between the outermost lines on transmission lines (Leu et al. 2008).	Completely Revised
MD SSS 28: New anthropogenic disturbances within PHMA or IHMA within a Conservation Area where the disturbance cap is already exceeded from any source or where the proposed development will result in the cap being exceeded will not be allowed in within that Conservation Area until enough habitat has been restored within that Conservation Area to maintain the area under this cap (subject to valid existing rights).	Same as 2015	Completely Revised

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MD SSS 29: New anthropogenic disturbances within PHMA (Idaho only): Anthropogenic Disturbance Screening Criteria. In order to avoid surface-disturbing activities in PHMA, priority will be given to development (including ROWs, fluid minerals and other mineral resources subject to applicable stipulations) outside of PHMA. When authorizing development in PHMA, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. In addition to the PHMA and IHMA Anthropogenic Disturbance Development Criteria (MD SSS 30), the following criteria must all be met in the project screening and assessment process: a. The population trend for the GRSG within the associated Conservation Area is stable or increasing over a three-year period and the population levels are not currently engaging the adaptive management triggers (this applies strictly to new authorizations; renewals and amendments of existing authorizations will not be subject to this criteria when it can be shown that long-term impacts from those renewals or amendments will be substantially the same as the existing development); b. The development with associated mitigation will not result in a net loss of GRSG Key habitat and mitigation will provide a net conservation benefit to the respective PHMA; c. The project and associated impacts will not result in a net loss of GRSG Key habitat or habitat fragmentation or other impacts causing a decline in the population of the species within the relevant Conservation Area (the project will be outside Key habitat in areas not meeting desired habitat conditions or the project will provide a benefit to habitat areas that are functioning in a limited way as habitat); d. The development cannot be reasonably accomplished outside of the PHMA; or can be either: 1) developed pursuant to a valid existing authorization; or 2) is co-located within the footprint of existing infrastructure (proposed actions will not increase the 2011 authorized footprint and associated impacts more than 50 percent, depending on industry practice). e. Development will be implemented adhering to the required design features (RDF) described in **Appendix C**; f. The project will not exceed the disturbance cap (MD SSS 27) g. The project has been reviewed by the State Implementation Team and recommended for consideration by the Idaho Governor.	Subject to valid existing rights, new anthropogenic disturbances in PHMA: Anthropogenic Disturbance Screening Criteria. In order to avoid surface-disturbing activities in PHMA, priority will be given to development of rights-of-way (ROWs), fluid minerals, and other mineral resources subject to applicable stipulations outside of PHMA. When authorizing development in PHMA, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. In addition to the PHMA and IHMA anthropogenic disturbance development criteria (MD SSS 30), the BLM will ensure an applicant has worked with the State of Idaho to submit a proposal that meets the following criteria: a. The population trend for the Greater Sage-Grouse in the associated conservation area is stable or increasing over a 3-year period and the population levels are not currently engaging the adaptive management triggers (this applies strictly to new authorizations; renewals and amendments of existing authorizations will not be subject to this criteria when it can be shown that long-term impacts from those renewals or amendments will be substantially the same as the existing development). b. The development with associated design features, avoidance, minimization, or mitigation actions will not result in a net loss of Greater Sage-Grouse key habitat or of the respective PHMA. c. The project, its design features, avoidance and minimization actions, and associated impacts will not result in a net loss of Greater Sage-Grouse key habitat or habitat fragmentation or other impacts causing a decline in the population of the species in the relevant conservation area. d. The development cannot be reasonably accomplished outside of the PHMA or can be either developed pursuant to a valid existing authorization or collocated within the footprint of existing infrastructure. Proposed actions will not increase the 2011 authorized footprint and associated impacts more than 50 percent, depending on industry practice. e. Development will adhere to the RDFs described in **Appendix C**. f. The project will not exceed the disturbance cap (MD SSS 27). g. Large-scale anthropogenic disturbances in PHMA will be reviewed by the technical and policy teams, as described in MD SSS 44. (See the glossary for definition of large-scale anthropogenic disturbances.)	Partially Revised
MD SSS 30: The following Anthropogenic Disturbance Development Criteria must be met in the screening and assessment process for proposals in PHMA and IHMA to discourage additional disturbance in PHMA and IHMA (as described in MD LR 2 and MD RE 1; applies to Idaho only): a. Through coordination with the USFWS and State of Idaho (as described in MD CC 1), it is determined that the project cannot be achieved, technically or economically, outside of this management area; and b. The project siting and/or design should best reduce cumulative impacts and/or impacts on GRSG and other high value natural, cultural, or societal resources; this may include co-location within the footprint for existing infrastructure, to the extent practicable; and c. The project results in a net conservation gain to GRSG Key habitat or with beneficial mitigation actions reduces habitat fragmentation or other threats within the Conservation Area; and d. The project design mitigates unavoidable impacts through appropriate compensatory mitigation; and e. Development will be implemented adhering to the RDFs described in **Appendix C**. f. The project will not exceed the disturbance cap (MD SSS 27).	The applicant will work with the State of Idaho to submit a proposal that meets all of the following anthropogenic disturbance development criteria in the screening and assessment process for proposals in PHMA and IHMA. This is to discourage additional disturbance in PHMA and IHMA (as described in MD LR 2 and MD RE 1): a. Through coordination with the State of Idaho (as described in MD CC 1), it is determined that the project cannot be achieved, technically or economically, outside of this management area b. The project siting and/or design should best reduce cumulative impacts and/or impacts on Greater Sage-Grouse and other high value natural, cultural, or societal resources; this may include collocation in the footprint for existing infrastructure, to the extent practicable c. The State of Idaho determines in coordination with BLM the project results in no net loss to Greater Sage-Grouse key habitat or, with mitigation actions, reduces habitat fragmentation or other threats in the conservation area; d. Development will adhere to the RDFs described in **Appendix C** e. The project will not exceed the disturbance cap (MD SSS 27) f. Large-scale anthropogenic disturbances in PHMA and IHMA will be reviewed by the technical and policy teams, as described in MD SSS 44.	Partially Revised

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MD SSS 31: Co-locating new infrastructure within existing ROWs and maintaining and upgrading ROWs is preferred over the creation of new ROWs or the construction of new facilities in all management area. Colocation for various activities is defined as: • Communication Sites – The installation of new equipment/facilities on or within or adjacent to existing authorized equipment/facilities or within a communication site boundary as designated in the Communication Site Plan. • Electrical Lines – Installation of new ROWs adjacent to current ROWs boundaries, not necessarily placed on the same power poles. • Other Rights-of-Way – The installation of new ROWs within the existing footprint of an approved ROW boundary or adjacent to an approved ROW boundary. • Designated Corridors – The installation of new rights-of-way within the existing corridor or adjacent to the existing corridor.	Same as 2015	No change (same as 2015)
MD SSS 32: Incorporate RDFs as described in **Appendix C** in the development of project or proposal implementation, reauthorizations or new authorizations and suppression activities, as conditions of approval (COAs) into any post-lease activities and as best management practices for locatable minerals activities, to the extent allowable by law, unless at least one of the following conditions can be demonstrated and documented in the NEPA analysis associated with the specific project: a. A specific RDF is not applicable to the site-specific conditions of the project or activity; b. A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; or c. Analysis concludes that following a specific RDF will provide no more protection to GRSG or its habitat than not following it, for the project being proposed.	In PHMA and IHMA, incorporate RDFs as described in **Appendix C**, in developing the project or proposal implementation, reauthorizations or new authorizations, as conditions of approval (COAs) into any post-lease activities and as BMPs for locatable minerals activities, to the extent allowable by law, unless at least one of the following conditions can be demonstrated and documented in the NEPA analysis associated with the specific project: a. A specific RDF is not applicable to the site-specific conditions of the project or activity; b. A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; or c. Analysis concludes that following a specific RDF will provide no more protection to GRSG or its habitat than not following it, for the project being proposed. In GHMA, the RDFs are considered BMPs that should be considered and applied, unless the proponent can show that applying the BMP is technically or economically impracticable.	Partially Revised
MD SSS 33: Conduct implementation and project activities, including construction and short-term anthropogenic disturbances consistent with seasonal habitat restrictions described in **Appendix C**.	Same as 2015	No change (same as 2015)
MD SSS 34: RDFs and seasonal habitat restrictions will not be required for emergency or short-term activities necessary to protect and preserve human life or property.	Same as 2015	No change (same as 2015)
MD SSS 35: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239) in accordance with **Appendix B**.	In undertaking BLM management actions in PHMA, IHMA, and GHMA, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances in accordance with **Appendix B**. The buffers do not apply to vegetation treatments specifically designed to improve or protect Greater Sage-Grouse habitat; however, impacts on leks should be analyzed and those impacts should be minimized to the extent practicable.	Partially Revised Same buffer distances as 2015 with updated definitions of leks
MD SSS 36: Incorporate appropriate conservation measures for slickspot peppergrass (*Lepidium papilliferum*) as described in the 2014 Conservation Agreement (as updated, amended or reauthorized) into implementation and project design within slickspot peppergrass habitat in the Jarbidge and Four Rivers Field Offices to avoid and minimize impacts on slickspot peppergrass.	Same as 2015	No change (same as 2015)
Monitoring	***Monitoring***	—
MD SSS 37: Once FIAT Assessments are complete, annually complete a review of FIAT Assessment implementation efforts within GRSG habitat with appropriate USFWS and state agency personnel.	Same as 2015	No change (same as 2015)
MD SSS 38: Monitor the effectiveness of projects (e.g., fuel breaks. fuels treatments) until objectives have been met or until it is determined that objectives cannot be met, according to the monitoring schedule identified for project implementation.	Same as 2015	No change (same as 2015)
MD SSS 39: Monitor invasive vegetation post vegetation management treatment.	Same as 2015	No change (same as 2015)
MD SSS 40: Monitor project construction areas for noxious weed and invasive species for at least 3 years, unless control is achieved earlier.	Same as 2015	No change (same as 2015)
MD SSS 41: Use lek, nesting and winter habitat maps and key habitat map (updates) to annually assess GRSG population and habitat status in the context of the adaptive management triggers.	Same as 2015	Completely Revised

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MD SSS 42: Continue to support updates to the Key Habitat map to track vegetation changes in relation to GRSG habitat on a yearly basis, until such a time this process is replaced. The process used to update the Key Habitat Map is described in Appendix F of the FEIS.	Same as 2015	Completely Revised
MD SSS 43: Monitor GRSG habitat as described in the monitoring framework plan (**Appendix D**) in coordination with IDFG.	Same as 2015	No change (same as 2015)
MD SSS 44: No Similar Action	In collaboration with the Idaho Governor's Office of Species Conservation, Idaho Department of Fish and Game, US Fish and Wildlife Service, and potentially other state and federal agencies, the BLM will form two teams (a technical team and a policy team) through a memorandum of understanding. These teams will be responsible for reviewing proposed infrastructure developments, exceptions, variances, adaptive management triggers and responses, habitat management area adjustments, and mitigation, as described in detail in **Appendix K**.	Partially Revised
VEGETATION (VEG)	***VEGETATION (VEG)***	—
Objectives:	**Objectives:**	—
Objective VEG 1: Reconnect and expand areas of higher native plant community integrity/rangeland health to increase the extent of high quality habitat and, where possible, to accommodate the future effects of climate change.	Same as 2015	No change (same as 2015)
Objective VEG 2: Increase the amount and functionality of seasonal habitats by: a. Increasing or enhancing canopy cover and average patch size of sagebrush. b. Increasing the amount, condition and connectivity of seasonal habitats. c. Protecting or improving GRSG migration/movement corridors. d. Reducing conifer encroachment within GRSG seasonal habitats. e. Improving understory (grass, forb) and/or riparian condition within breeding and late brood- rearing habitats. f. Reducing the extent of annual grasslands within and adjacent to PHMA and IHMA. Decadal treatment objectives by population area are identified in **Table 2-3**, Estimated Acres of Treatment Needed within a 10-Year Period to Achieve Vegetation Objectives on BLM-Administered Lands.	Same as 2015	No change (same as 2015)
Objective VEG 3: In all SFA and PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush canopy cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).	This decision has been deleted	No change (same as 2019)
Management Decisions (MD):	**Management Decisions (MD):**	—
Sagebrush Steppe:	Sagebrush Steppe:	—
MD VEG 1: Implement habitat rehabilitation or restoration projects in areas that have potential to improve GRSG habitat using a full array of treatment activities as appropriate, including chemical, mechanical and seeding treatments.	Same as 2015	No change (same as 2015)
MD VEG 2: Implement vegetation rehabilitation or manipulation projects to enhance sagebrush cover or to promote diverse and healthy grass and forb understory to achieve the greatest improvement in GRSG habitat based on FIAT Assessments, HAF assessments, other vegetative assessment data and local, site specific factors that indicate sagebrush canopy cover or herbaceous conditions do not meet habitat management objectives (i.e. is minimal or exceeds optimal characteristics). This may necessitate the use of prescribed fire as a site preparation technique to remove annual grass residual growth prior to the use of herbicides in the restoration of certain lower elevation sites (e.g., Wyoming big sagebrush) but such efforts will be carefully planned and coordinated to minimize impacts on GRSG seasonal habitats.	Same as 2015	No change (same as 2015)
MD VEG 3: Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success (Richards et al. 1998). Non-native seeds may be used as long as they support GRSG habitat objectives (Pyke 2011) to increase probability of success, when adapted seed availability is low or to compete with invasive species especially on harsher sites.	Same as 2015	No change (same as 2015)

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MD VEG 4: Implement management changes in restoration and rehabilitation areas, as necessary, to maintain suitable GRSG habitat, improve unsuitable GRSG habitat and to ensure long-term persistence of improved GRSG habitat (Eiswerth and Shonkwiler 2006). Management changes can be considered during livestock grazing permit renewals, travel management planning, and renewal or reauthorization of ROWs.	Same as 2015	No change (same as 2015)
MD VEG 5: Consider establishing seed harvest areas that are managed for seed production (Armstrong 2007) to provide a reliable source of locally adapted seed to use during rehabilitation and restoration activities.	Same as 2015	No change (same as 2015)
MD VEG 6: Allocate use of native seed to GRSG or ESA listed species habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from ESR projects outside of PHMA or IHMA to those inside it. Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG habitat conservation objectives (Pyke 2011). Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.	Same as 2015	No change (same as 2015)
MD VEG 7: During land health assessments, evaluate the relative value of existing nonnative seeding within GRSG habitat as: 1) a component of a grazing system allowing improvement of adjacent native vegetation, 2) development of a forage reserve, 3) incorporation into a fuel break system (Davies et al. 2011) or 4) restoration/diversification for GRSG habitat improvement. Where appropriate and feasible, diversify seedings, or restore to native vegetation when potential benefits to GRSG habitat outweigh the other potential uses of the non-native seeding, with emphasis on PHMA and IHMA. Allow recolonization of seedings by sagebrush and other native vegetation.	Same as 2015	No change (same as 2015)
Conifer Encroachment:	Conifer Encroachment:	—
MD VEG 8: Remove conifers encroaching into sagebrush habitats, in a manner that considers tribal cultural values. Prioritize treatments closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and tools like the FIAT report (Chambers et. al., 2014) will help refine the location for specific areas to be treated.	Same as 2015	No change (same as 2015)
Invasive Species:	Invasive Species:	—
MD VEG 9: Incorporate results of the FIAT Assessments into projects and activities addressing invasive species as appropriate.	Same as 2015	No change (same as 2015)
MD VEG 10: Implement noxious weed and invasive species control using integrated vegetation management actions per national guidance and local weed management plans for Cooperative Weed Management Areas in cooperation with State and Federal agencies, affected counties, and adjoining private lands owners.	Same as 2015	No change (same as 2015)
MD VEG 11: Conduct integrated weed management actions for noxious and invasive weed populations that are impacting or threatening GRSG habitat quality using a variety of eradication and control techniques including chemical, mechanical and other appropriate means.	Same as 2015	No change (same as 2015)
MD VEG 12: Require project proponent (projects described in MD SSS 27 and which are included in the anthropogenic disturbance cap evaluation) to ensure that noxious weeds and invasive species caused as a result of the project are treated to eliminate establishment on the disturbed project construction areas for at least 3 years and monitored and treated during the life of the project.	Same as 2015	No change (same as 2015)
MD VEG 13: Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species.	Same as 2015	No change (same as 2015)
FIRE AND FUELS MANAGEMENT (FIRE)	***FIRE AND FUELS MANAGEMENT (FIRE)***	—
Objectives:	**Objectives:**	—
Objective FIRE 1: Design fuel treatments to restore, enhance, or maintain GRSG habitat.	Same as 2015	No change (same as 2015)
Objective FIRE 2: Manage wildfires to minimize loss of sagebrush and protect GRSG habitat.	Same as 2015	No change (same as 2015)
Management Decisions (MD):	**Management Decisions (MD):**	—
Pre-Suppression:	Pre-Suppression:	—
MD FIRE 1: (Wildfire Preparedness): Support development and implementation of Rangeland Fire Protection Associations (RFPAs) in coordination with the State of Idaho.	Same as 2015	No change (same as 2015)
MD FIRE 2: Develop a consistent approach to fire restrictions within GRSG habitat through the existing coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions, and predicted weather patterns).	Same as 2015	No change (same as 2015)

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MD FIRE 3: Annually incorporate into existing fire management plans results and updates from the Wildfire and Invasive Species Habitat Assessments (FIAT Assessments) described in **Appendix H**, to communicate/explain the resource value of GRSG habitat, including fire prevention messages and actions to reduce human-caused ignitions.	Same as 2015	No change (same as 2015)
MD FIRE 4: Continue to participate with the Wildland Fire Leadership Council, a cooperative, interagency organization dedicated to achieving consistent implementation of the goals, actions, and policies in the National Fire Plan and the Federal Wildland Fire Management Policy.	Same as 2015	No change (same as 2015)
MD FIRE 5: Continue annual coordination meetings held between cooperating agencies that have fire suppression responsibilities. Incorporate Rangeland Fire Protection Associations and other stakeholders into this coordination. Discuss priority suppression areas and distribute maps showing priority suppression areas at both the Conservation Area and the local office levels as based on the adaptive management strategy and FIAT Assessments.	Same as 2015	No change (same as 2015)
MD FIRE 6: Ensure firefighter personnel receive annual orientation regarding GRSG habitat and sagebrush management issues as related to wildfire suppression.	Same as 2015	No change (same as 2015)
MD FIRE 7: As part of the FIAT Assessments, identify roads, trails, and recreational use areas with high frequency of human caused fires within or adjacent to the PHMA or IHMA. Consider these areas during annual fire restriction evaluations, and as appropriate, through site specific management.	Same as 2015	No change (same as 2015)
MD FIRE 8: Coordinate with Federal, State and local jurisdictions on fire and litter prevention programs to reduce human caused ignitions.	Same as 2015	No change (same as 2015)
MD FIRE 9: Implement activities identified within the FIAT Assessments.	Same as 2015	No change (same as 2015)
Suppression:	Suppression:	—
MD FIRE 10: Complete Wildland Fire and Invasive Species Assessments (FIAT Assessments) as described within **Appendix H** and incorporate results into appropriate Fire Management Plans as they are completed. FIAT Assessments are interdisciplinary evaluations of the threats posed by wildfire and invasive species, as well as identification of focal and emphasis habitats/treatment opportunities for fuels management, fire management, and restoration. These FIAT Assessments identify focal and emphasis habitats and describe strategies for fuels management, suppression and restoration activities. Focal and Emphasis Habitats identified through the FIAT Assessment to further refine priority areas for treatments to reduce the threats posed by wildfire, invasive annual grass and conifer expansion.	Same as 2015	No change (same as 2015)
MD FIRE 11: As part of the FIAT Assessments incorporate a wildfire response time analysis focusing on response time to identified priority areas within PHMA and IHMA or on those fires that have the potential to impact PHMA and IHMA. Incorporate findings into Unit Initial Attack program that determines initial attack resources.	Same as 2015	No change (same as 2015)
MD FIRE 12: As part of the FIAT Assessment incorporate a water capacity analysis for suppression purposes, including potential private water sources. Utilized the analysis to ensure water availability for response to fire in or threatening PHMA and IHMA during initial attack.	Same as 2015	No change (same as 2015)
MD FIRE 13: During high fire danger conditions, stage initial attack and secure additional resources closer to priority areas identified in the FIAT Assessments, based on anticipated fires and weather conditions, with particular consideration of the West Owyhee, Southern and Desert Conservation Areas to ensure quicker response times in or near GRSG habitat after considerations and placement of resources to protect human life and property.	Same as 2015	No change (same as 2015)
MD FIRE 14: Utilize a full range of fire management strategies and tactics through strategic wildfire suppression planning consistent with appropriate management response and within acceptable risk levels, to achieve resource objectives for GRSG habitat consistent with land use plan direction. Utilizing both direct and indirect attack as appropriate to limit the overall amount of GRSG habitat burned. This can include suppressing fires in intact sagebrush habitats; limiting fire growth in GHMA when suppression resources are available or managing wildfire for resource benefit in areas of conifer (juniper) encroachment.	Same as 2015	No change (same as 2015)

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MD FIRE 15: Suppression priorities: The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Maintaining GRSG habitat will be the highest natural resources priority immediately after human life and property, commensurate with threatened and endangered species habitat or other critical habitats to be protected.	Same as 2015	No change (same as 2015)
MD FIRE 16: Ensure close coordination with federal and state firefighters including the Rangeland Fire Protection Associations during suppression activities.	Same as 2015	No change (same as 2015)
Fuel Management:	Fuel Management:	—
MD FIRE 17: Design and implement fuels treatments that will reduce the potential start and spread of unwanted wildfires and provide anchor points or control lines for the containment of wildfires during suppression activities with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems and successfully rehabilitated areas and strategically and effectively reduce wildfire threats in the greatest area.	Same as 2015	No change (same as 2015)
MD FIRE 18: Enhance (or maintain/retain) sagebrush canopy cover and community structure to match expected potential for the ecological site and consistent with GRSG habitat objectives unless fuels management objectives requires additional reduction in sagebrush cover to meet strategic protection of GRSG habitat. Closely evaluate the benefits of the fuel management treatments against the additional loss of sagebrush cover on the local landscape in the NEPA process.	Same as 2015	No change (same as 2015)
MD FIRE 19: Apply appropriate seasonal restrictions for implementing vegetation and fuels management treatments according to the type of seasonal habitats present. Allow no treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around and/or in the winter range and will protect, maintain, increase, or enhance winter range habitat quality. Ensure chemical applications are utilized where they will assist in success of fuels treatments. Strategically place treatments on a landscape scale to prevent fire from spreading into PHMA or WUI.	Same as 2015	No change (same as 2015)
MD FIRE 20: Develop a fuels continuity and management strategy to expand, enhance, maintain and protect GRSG habitat informed by the FIAT Assessments completed as described in **Appendix H**.	Same as 2015	No change (same as 2015)
MD FIRE 21: When developing the fuels management strategy as part of the FIAT Assessment described in **Appendix H** consider up-to-date fuels profiles; land use plan direction; current and potential habitat fragmentation; sagebrush and GRSG ecological factors; active vegetation management steps to provide critical breaks in fuel continuity where appropriate; incorporate a comparative risk analysis with regard to the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken.	Same as 2015	No change (same as 2015)
MD FIRE 22: Fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, and protect GRSG habitat which considers a full range of cost effective fuel reduction techniques, including: chemical, biological (including grazing and targeted grazing), mechanical and prescribed fire treatments.	Same as 2015	No change (same as 2015)
MD FIRE 23: Existing and proposed linear ROWs can be considered for use and maintenance as vegetated fuel breaks in appropriate areas (this activity may or may not be part of the ROW permit or the responsibility of the permit holder, in cases where this activity is considered part of mitigation for project design then it will be appropriately included as part of the ROW permit and the responsibility of the permit holder for development and maintenance).	Same as 2015	No change (same as 2015)
MD FIRE 24: Fuel breaks will incorporate existing vegetation treatments (seedings), rocky areas or other appropriate topography or features or be located adjacent to existing linear disturbance areas where appropriate. Fuel breaks should be placed in areas with the greatest likelihood of compartmentalizing a fire and/or to foster suppression options to protect existing intact habitat.	Same as 2015	No change (same as 2015)
MD FIRE 25: Strategically pre-treat areas to reduce fine fuels consistent with areas and results identified within the Wildfire and Invasive Species Assessments.	Same as 2015	No change (same as 2015)
MD FIRE 26: Protect vegetation restoration and rehabilitation efforts/projects from subsequent fire events.	Same as 2015	No change (same as 2015)

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MD FIRE 27: Targeted grazing as a fuels treatment to adjust the vegetation conditions to reduce the potential start and spread of wildfires may be implemented within existing grazing authorizations if feasible such as through temporary non-renewable authorizations, or through contracts, agreements or other appropriate means separate from existing grazing authorizations and permits.	Same as 2015	No change (same as 2015)
MD FIRE 28: Targeted grazing to achieve fuels management objectives should conform to the following criteria: a. Targeted grazing should be implemented strategically on the landscape, and directly involve the minimum footprint and grazing intensity required to meet fuels management objectives. b. Conform to the applicable Standards for Rangeland Health and Guidelines for Livestock Grazing Management at the assessment scale (pasture/watershed). c. Where feasible and applicable coordinate with the grazing permittee to strategically reduce fuels through livestock management within the Mandatory Terms and Conditions of the applicable grazing authorizations	Same as 2015	No change (same as 2015)
MD FIRE 29: Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low or non-economical, nonnative seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and nonnative species, as appropriate, to provide for fuel breaks.	Same as 2015	No change (same as 2015)
MD FIRE 30: Maintain effectiveness of fuels projects, including fuel breaks, to ensure long-term success, including persistence of seeded species and/or other treatment components while maintaining the integrity of adjacent vegetation.	Same as 2015	No change (same as 2015)
MD FIRE 31: If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address: • why alternative techniques were not selected as a viable options; • how GRSG goals and objectives will be met by its use; • how the COT Report objectives will be addressed and met; • a risk assessment to address how potential threats to GRSG habitat will be minimized. Allow prescribed fire as a vegetation or fuels treatment in Wyoming big sagebrush sites or other xeric sagebrush species sites, or in areas with a potential for post-fire exotic annual dominance only after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire can be used to meet specific fuels objectives that will protect Greater Sage-Grouse habitat in PHMA (e.g., creation of fuel breaks that will disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities). Allow prescribed fire in known sage-grouse winter range only after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat will need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.	Same as 2015	No change (same as 2015)
Post Fire Management:	Post Fire Management:	—
MD FIRE 32: Utilize the findings and Restoration/Rehabilitation Strategy developed as part of the FIAT Assessment process described in **Appendix H** to determine if GRSG rehabilitation actions are needed, based on ecological potential, and direct emergency stabilization and rehabilitation (ESR) (BLM) actions after fire.	Same as 2015	No change (same as 2015)
MD FIRE 33: Incorporate GRSG Habitat Management Objectives into ESR/BAER plans based on site potential and in accordance with the Restoration/Rehabilitation Strategy developed as a result of the FIAT Assessments.	Same as 2015	No change (same as 2015)

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MD FIRE 34: Provide adequate rest from livestock grazing to allow natural recovery of existing vegetation and successful establishment of seeded species within burned/ESR areas. All new seedings of grasses and forbs should not be grazed until at least the end of the second growing season, and longer as needed to allow plants to mature and develop robust root systems which will stabilize the site, compete effectively against cheatgrass and other invasive annuals, and remain sustainable under long-term grazing management. Adjust other management activities, as appropriate, to meet ESR objectives.	Same as 2015	No change (same as 2015)
MD FIRE 35: Adjust, as appropriate, livestock management on adjacent unburned areas to mitigate the effect of the burn on local GRSG populations.	Same as 2015	No change (same as 2015)
MD FIRE 36: Following seedling establishment, modify grazing management practices if needed to achieve long-term vegetation and habitat objectives.	Same as 2015	No change (same as 2015)
LIVESTOCK GRAZING (LG)	***LIVESTOCK GRAZING (LG)***	—
Objectives:	**Objectives:**	—
N/A	N/A	New: Objective RM-1 added
Management Decisions (MD):	**Management Decisions (MD):**	—
MD LG 1: Maintain existing areas designated as available or unavailable for livestock grazing. Existing active AUMs for livestock grazing within the planning area will not be changed at the broad scale, though the number of AUMs available on an allotment may be adjusted based on site-specific conditions to meet management objectives during term permit renewals, AMP development, or other appropriate implementation planning. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, and season of use in accordance with applicable regulations.	Same as 2015	Completely Revised
MD LG 2: Prioritize BLM land health assessments and processing of BLM grazing permits consistent with management area prioritization (MD SSS 4), unless other higher priority considerations exist (MD LG 15) or other factors such as threatened, endangered and proposed species habitat that livestock grazing can affect. Where possible, conduct land health assessments at the watershed, or other meaningful landscape-scale.	Same as 2015	Completely Revised- Mostly covered with BMPs, Appendix 5 (see section 5.1.2, bullet 1.
MD LG 3: Where opportunities exist, coordinate with other land managers to encourage livestock operations that utilize mixed federal, private and/or state land to be managed at the landscape scale to benefit GRSG and their habitat across land ownerships.	Same as 2015	Completely Revised- Covered with Section 5.1.1, Appendix 5 (coordination)
MD LG 4: PHMA & IHMA: During the land health assessment process, identify the type(s) of seasonal habitat the assessed areas are capable of supporting. Utilize the habitat assessment framework, (Stiver et al. 2015) or other BLM approved methodology, in accordance with current policy and guidance to determine whether vegetation structure, condition and composition are meeting GRSG habitat objectives including riparian and lentic areas (Objective SSS 2; Table 2-2). Use appropriate Ecological Site Descriptions, reference sheets and state and transition models to inform desired habitat conditions and expected responses to management changes for the land unit being assessed.	Same as 2015	Completely Revised
MD LG 5: When modifying grazing management, analyze indirect impacts on habitat, including changes in fuel loading and wildfire behavior.	Same as 2015	Completely Revised
MD LG 6: When livestock management practices are determined to not be compatible with meeting or making progress towards achievable habitat objectives following appropriate consultation, cooperation and coordination, implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats) (Briske et al. 2011); and • Grazing schedules (including rest or deferment). *Not in Priority Order	Same as 2015	Completely Revised Covered with Allocation RM-1, MD RM-1, and with BMPs, Appendix 5 (see section 5.1.2), bullet 2
MD LG 7: Where opportunities exist, establish forage reserves to facilitate restoration and rehabilitation efforts in GRSG habitat areas. A forage reserve is an area that is set aside for use as needed by various permittees who might be displaced by wildfire, ESR, restoration efforts, etc. rather than having a term permit issued for grazing like a regular allotment.	Same as 2015	Completely Revised- Covered with RM-6 and BMPs, Appendix 5 (see section 5.1.2), bullet 12
MD LG 8: PHMA & IHMA - Where practical, design pasture rotations to utilize non-native perennial grass seedings and/or annual grasslands, during GRSG nesting season annually or periodically.	Same as 2015	Completely Revised- Covered with Allocation RM-1, MD RM-1, & with BMPs, Appendix 5 (see section 5.1.5), bullets 1 & 2

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MD LG 9: Evaluate the locations where salt/supplements are placed, coordinate salt/supplements placement to reduce impacts on GRSG habitat (e.g., existing disturbed areas).	Same as 2015	Completely Revised- Covered with BMPs, Appendix 5 (see section 5.1.2), bullets 3 & 4
MD LG 10: Incorporate RDFs into Terms and Conditions for crossing permits to limit disturbance of occupied leks when trailing livestock across BLM administered lands in the spring. Work with permittees in locating over-nighting, watering and bedding locations to minimize impacts on seasonal habitats.	Same as 2015	Completely Revised Covered with BMPs, Appendix 5 (see section 5.1.2), bullets 5, 8, & 9
MD LG 11: Design any new structural range improvements, following appropriate cooperation, consultation and coordination, to minimize and/or mitigate impacts on GRSG habitat. Any new structural range improvements should be placed along existing disturbance corridors or in unsuitable habitat, to the extent practical, and are subject to RDFs (**Appendix C**). Structural range improvement in this context, include, but are not limited to: fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments.	Same as 2015	Completely Revised Covered with MD RM-4 and BMPs, Appendix 5 (see section 5.1.3)
MD LG 12: During the land health assessment and grazing permit renewal process, evaluate existing livestock management range improvements with respect to their effect on GRSG habitat. Consider removal of projects that are not needed for effective livestock management, are no longer in working condition, and/or negatively affect GRSG habitat, with the exception of functional projects needed for management of habitat for other threatened, endangered or proposed species or other sensitive resources.	Same as 2015	Completely Revised Covered with MDs RM-3, RM-5 and BMPs, Appendix 5 (see section 5.1.3), bullet 14
MD LG 13: Prioritize removal, modification or marking of fences or other structures in areas of high collision risk following appropriate cooperation, consultation and coordination to reduce the incidence of GRSG mortality due to fence strikes (Stevens et al. 2012).	Same as 2015	Completely Revised Covered with MD RM-5 and BMPs, Appendix 5 (see section 5.1.3), bullet 10
MD LG 14: In response to weather conditions (i.e. drought) adjust grazing management (i.e., delay turnout, adjust pasture rotations, adjust the amount and/or duration of grazing) as appropriate to provide for adequate food and cover for GRSG.	Same as 2015	Completely Revised- Covered with BMPs, Appendix 5 (see section 5.1.4)
MD LG 15: The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in Sagebrush Focal Areas (SFA) followed by PHMA outside of the SFA. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFA followed by areas of PHMA outside SFA. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.	Generally, the BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases based on land health conditions or concerns related to rangeland health standards. If similar issues are found in both PHMA and IHMA, then those in PHMA should be addressed first. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting land health standards and that have declining Greater Sage-Grouse populations, defined by a soft or hard population adaptive management trigger being engaged. Greater Sage-Grouse populations that are stable or trending upward will be a lower priority for permit renewal and the assessment process. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns, such as fire, and legal obligations.	Completely Revised Mostly covered with BMPs, Appendix 5 (see section 5.1.2), bullet 1
MD LG 16: The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will include specific management thresholds, based on GRSG Habitat Objectives Table, Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.	Grazing in the PHMA and IHMA will be managed according to the process outlined in the text below, and the grazing permit renewal process will be managed according to 43 CFR 4100, Subpart 4180, and as outlined in the process below. a. Incorporate the Greater Sage-Grouse desired conditions in Table 2.2 [of the 2015 Final EIS] and management considerations as desired conditions, and manage livestock grazing, recognizing that these conditions may not be achievable: (1) due to the existing ecological condition, ecological potential, or existing vegetation; or (2) due to causal events unrelated to existing livestock grazing; and 3) that they are not intended to be prescriptive at the allotment level. b. Conduct habitat assessments using appropriate monitoring methods. Where appropriate, make a determination of factors causing any failure to achieve the desired conditions in Table 2.2 [of the 2015 Final EIS]. The assessment will be conducted at a resolution and scale sufficient to document the habitat condition and will include local, spatial, and interannual variability. Any determination relative to the habitat characteristics (Table 2.2 [of the 2015 Final EIS]) will be based on existing ecological condition, ecological potential, and existing vegetation information. This is to ensure the assessment recognizes whether these habitat characteristics are achievable.	Completely Revised Mostly covered with MD RM-1 & RM-2

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(see above)	c. The assessment will rely on published characteristics of Greater Sage-Grouse habitat and the ecological site descriptions, on Table 2.2 [of the 2015 Final EIS as amended], and where available and applicable, rangeland health determinations made in accordance with 43 CFR 4180.2(c). d. After conducting the assessment in (b), above, if the current grazing system achieves applicable Idaho rangeland health standards, absent substantial and compelling information, no further grazing management changes are necessary to achieve desired conditions for Greater Sage-Grouse habitat. e. If the process and conditions outlined in (b), above demonstrate that livestock grazing is limiting achievement of the desired conditions (Table 2.2 [of the 2015 Final EIS]), renewed permits will include measures, including but not limited to the actions outlined in **Appendix C** to achieve desired habitat conditions. These measures must be tailored to address the specific management issues. f. Adaptive management changes related to existing grazing permits should be undertaken only where improper grazing is determined to be the causal factor in not meeting habitat characteristics, specific to site capability, based on monitoring, with appropriate spatial variability. See **Appendix C**. g. Where management changes are needed and necessary pursuant to (f), above, implement management actions that are narrowly tailored to address the specific habitat objective applied at the allotment or activity plan level, including the actions outlined in **Appendix C**, Grazing Section of BMPs. (The Governor's plan is attached as **Appendix I** for references to this section.)	*(see above)*
MD LG 17: Allotments within SFA, followed by those within PHMA, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks can include monitoring for actual use, utilization, and use supervision. Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFA followed by areas of PHMA outside SFA.	Allotments within PHMA with declining Greater Sage-Grouse populations, defined by a soft or hard adaptive management trigger being engaged and/or with land health concerns, will be prioritized for field checks.	Completely Revised
MD LG 18: At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3.	Same as 2015	Removed
WILD HORSES AND BURROS (WHB)	***WILD HORSES AND BURROS (WHB)***	—
Management Decisions:	**Management Decisions:**	—
WHB-1: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (Table 2-2).	Same as 2015	Completely revised
WHB-2: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are: 1) HMAs Containing SFA; 2) HMAs containing PHMA; 3) HMAs containing IHMA; 4) HMAs containing GHMA; 5) HMAs containing sagebrush habitat outside of PHMA, IHMA, and GHMA mapped habitat; 6) HMAs without GRSG Habitat.	Complete rangeland health assessments for herd management areas containing GRSG habitat using an interdisciplinary team of range, wildlife, and riparian specialists. The priority for conducting assessments is herd management areas with known land health issues and where local populations of GRSG are in decline according to the adaptive management trigger standards. When similar issues are found in multiple herd management areas, then the priority should be: 1) herd management areas containing PHMA; 2) herd management areas containing IHMA; 3) herd management areas containing GHMA; 4) herd management areas containing GRSG habitat outside of PHMA, IHMA, and GHMA mapped habitat; 6) herd management areas without GRSG Habitat.	No change (same as 2019)
WHB-3: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas not allocated as HMAs and occupied by wild horses and burros in SFA followed by PHMA.	Prioritize gathers and population growth suppression techniques in herd management areas in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas not allocated as herd management areas and occupied by wild horses and burros in PHMA.	Completely revised
WHB-4: In SFA and PHMA outside of SFA, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.	In PHMA, assess and adjust appropriate management levels (AMLs) through the NEPA process within herd management areas when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.	Completely revised

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WHB-5: In SFA and PHMA outside of SFA, monitor the effects of wild horse and burro use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.	In PHMA, monitor the effects of wild horse and burro use in relation to GRSG seasonal habitat objectives to help determine future management actions.	No change (same as 2019)
WHB-6: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with emphasis placed on SFA and other PHMA.	Develop or amend herd management area plans to incorporate GRSG habitat objectives and management considerations for all herd management areas in GRSG habitat, with emphasis placed on PHMA.	No change (same as 2019)
WHB-7: Consider removals or exclusion of wild horse and burros during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.	Same as 2015	No change (same as 2015)
WHB-8: When conducting NEPA analysis for wild horse and burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect impacts on GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.	Same as 2015	No change (same as 2015)
WHB-9: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the wild horse and burro program.	Same as 2015	No change (same as 2015)
MINERAL RESOURCES (MR)	***MINERAL RESOURCES (MR)***	—
Fluid Minerals	***Fluid Minerals***	—
Objective MR 1: Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA, IHMA, and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA, IHMA, and GHMA, and subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 USC 226(p) and 43 CFR 3162.3-1(h).	Same as 2015	Completely Revised
Objective MR 2: Where a proposed fluid mineral development project on an existing lease can adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize and apply compensatory mitigation to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD or Geothermal Drilling Permit (GDP) for the lease to avoid, minimize, and apply compensatory mitigation to impacts on GRSG or its habitat and will ensure that the best information about the GRSG and its habitat informs and helps to guide development of such Federal leases.	Where a proposed fluid mineral development project on an existing lease can adversely affect GRSG populations or habitat in PHMA, IHMA, and GHMA, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD or Geothermal Drilling Permit (GDP) for the lease. This would be apply the mitigation hierarchy to impacts on GRSG or its habitat and will ensure that the best information about the GRSG and its habitat informs and helps to guide development of such Federal leases.	Partially Revised for PHMA and IHMA; no change for GHMA. MD for 'Mgmt Action to Address Development in Areas Already Leased' mostly captures Objective MR 2 for PHMA and IHMA.
Management Decisions (MD):	**Management Decisions (MD):**	—
MD MR 1: Idaho and Montana: Areas within SFA will be open to fluid mineral leasing and development and geophysical exploration subject to NSO without waiver, exception, or modification. Areas within PHMA (outside SFA) and IHMA will be open to mineral leasing and development and geophysical exploration subject to NSO with a limited exception (MD MR 3). GHMA will be open to mineral leasing and development and geophysical exploration subject to CSU which includes buffers and standard stipulations.	Areas within PHMA and IHMA will be open to mineral leasing and development and geophysical exploration subject to NSO with a limited exception (MD MR 3). GHMA will be open to mineral leasing and development and geophysical exploration subject to CSU which includes buffers and standard stipulations and best management practices as identified in Appendix C (Required Design Features).	No change (same as 2019)
MD MR 2: In Idaho, parcels nominated for lease in PHMA or IHMA will be evaluated prior to lease offering to determine if development is feasible. In GHMA, parcels will not be offered for lease if buffers and restrictions (including RDFs) preclude development in the leasing area.	Parcels nominated for lease in PHMA, IHMA, or GHMA will be evaluated prior to lease offering to determine if development is feasible.	Completely revised Similar language excluded from the Approved RMP Amendment, referring to SOP for minerals leasing protocol.

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MD MR 3: PHMA and IHMA: No waivers or modifications to a fluid mineral lease NSO stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease NSO stipulation only where the proposed action: i. Will not have direct, indirect, or cumulative effects on GRSG or its habitat; or, ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and will provide a clear conservation gain to GRSG. Exceptions based on conservation gain (ii) may only be considered in (a) PHMA of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid Federal fluid mineral lease existing as of the date of this RMP amendment. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other GRSG expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publicly available at least quarterly.	PHMA and IHMA: No waivers or modifications to a fluid mineral lease NSO stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease NSO stipulation only where the proposed action: i. Will not have direct, indirect, or cumulative effects on GRSG or its habitat; or, ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide no net loss to GRSG. Exceptions based on no net loss (ii) may only be considered in (a) PHMA of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid Federal fluid mineral lease existing as of the date of this RMP amendment. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director and in coordination with the Technical and Policy Team. Approved exceptions will be made publicly available at least quarterly.	Completely Revised
MD MR 4: Incorporate required design features and best management practices appropriate to the management area as COAs when post leasing activity is proposed into any post-lease authorizations.	—	No change (same as 2015)
MD MR 6: Complete a Master Development Plan, consistent with plan development guide on leases where a producing field is proposed to be developed.	—	No change (same as 2015)
MD MR 7: Encourage unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring). The unitization must be designed in a manner to minimize adverse impacts on GRSG according to the Federal Lease Form, 3100-11, Sections 4 and 6.	—	No change (same as 2015)
MD MR 8: Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize impacts on GRSG populations or habitat.	Issue written orders of the authorized officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize impacts on GRSG populations or habitat.	Completely Revised
Locatable Minerals	Locatable Minerals	—
MD MR 9: Apply reasonable and appropriate RDFs to locatable minerals, to the extent consistent with applicable law to prevent unnecessary or undue degradation of GRSG habitat when a Plan of Operations is submitted for BLM approval, in accordance with 43 CFR 3809.411(d)(2).	Same as 2015	No change (same as 2015)
MD MR 10: Recommend SFA for withdrawal from the General Mining Act of 1872, as amended, subject to valid existing rights.	This decision has been deleted.	No change (same as 2019)
Salable Minerals	Salable Minerals	—
MD MR 11: Idaho: PHMA are closed to new mineral materials sales. However, these areas remain "open" to free use permits and the expansion of existing active pits only if the following criteria are met: • the project area disturbance cap is not exceeded within a BSU; • the activity is subject to the provisions set forth in the mitigation framework [**Appendix F**]; • all applicable required design features are applied; and • the activity is permissible under the Idaho exception and development criteria (MD SSS 29 and MD SSS 30) • IHMA: All IHMA will be open to mineral materials development, consistent with the Idaho Anthropogenic Disturbance Criteria (MD SSS 30), and subject to RDFs, and buffers. Sales from existing community pits within IHMA will be subject to seasonal timing restrictions (**Appendix C**).	PHMA: All PHMA will be closed to new mineral materials development, but continued use of existing pits will be allowed. New free use permits and the expansion of existing free use permits may be considered only if the following criteria are met: • the project area disturbance cap is not exceeded within a BSU; • the activity is subject to the provisions set forth in the mitigation framework [**Appendix F**]; • all applicable required design features are applied; and • the activity is permissible under the Idaho exception and development criteria (MD SSS 29 and MD SSS 30) • IHMA: All IHMA will be open to mineral materials development, consistent with the Idaho Anthropogenic Disturbance Criteria (MD SSS 30), and subject to RDFs, and buffers.	Completely Revised

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
• GHMA: All GHMA will be open to mineral materials development, subject to RDFs and buffers. Sales from existing community pits within GHMA will be subject to seasonal timing restrictions (**Appendix C**).	• GHMA: All GHMA will be open to mineral materials development, subject to best management practices, as described in **Appendix C**.	*(see above)*
MD MR 12: Restore saleable mineral pits no longer in use to meet GRSG habitat management objectives.	—	No change (same as 2015)
MD MR 13: Require reclamation bonding that will require restoration of GRSG habitat on new site authorizations for mineral material pits in IHMA (this will not apply to free use permits issued to a government entity such as a county road district, but will apply to non-profit entities).	—	No change (same as 2015)
Nonenergy Leasable Minerals	Nonenergy Leasable Minerals	—
MD MR 15: PHMA are closed to non-energy mineral leasing. IHMA and GHMA: Areas within Known Phosphate Leasing Areas (KPLAs) will remain open to leasing subject to standard stipulations. IHMA areas outside of KPLAs are open to prospecting and subsequent leasing provided the Anthropogenic Disturbance Development Criteria (MD SSS 30) and the anthropogenic disturbance cap (MD SSS 27) can be met. RDFs and buffers shall be applied to prospecting permits. GHMA: Lands outside KPLAs are available for prospecting and subsequent leasing and initial mine development subject to RDFs, buffers, and standard stipulations.	PHMA are closed to non-energy mineral leasing. IHMA and GHMA: Areas within Known Phosphate Leasing Areas (KPLAs) will remain open to leasing subject to standard stipulations. IHMA areas outside of KPLAs are open to prospecting and subsequent leasing provided the Anthropogenic Disturbance Development Criteria (MD SSS 30) and the anthropogenic disturbance cap (MD SSS 27) can be met. RDFs and buffers shall be applied to prospecting permits. GHMA: Lands outside KPLAs are available for prospecting and subsequent leasing and initial mine development subject to standard stipulations and best management practices as described in Appendix C.	Partially Revised MD SSS 32 will retain RDFs in GHMA not BMPs
MD MR 16: Require seasonal and daily timing restrictions (**Appendix C**) in undeveloped nonenergy mineral leases when exploration activities or initial mine development is proposed (e.g. exploration drilling, timber removal, shrub clearing, etc.) as COAs.	Same as 2015	No change (same as 2015)
MD MR 17: Include RDFs as COAs to mine plans in undeveloped non-energy mineral leases for exploration activities or initial mine development.	Same as 2015	No change (same as 2015)
Mineral Split Estate	Mineral Split Estate	—
MD MR 19: BLM Owns Mineral Estate – non-federal surface owner: Where the federal government owns the mineral estate in PHMA, IHMA, and GHMA, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	Same as 2015	No change (same as 2015)
MD MR 20: BLM owns surface – non-federal mineral estate owner: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA, IHMA, and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Same as 2015	No change (same as 2015)
RENEWABLE ENERGY (WIND AND SOLAR) (RE)	***RENEWABLE ENERGY (WIND AND SOLAR) (RE)***	—
Management Decisions:	**Management Decisions:**	—
MD RE 1: PHMA: Designate and manage PHMA as exclusion areas for utility scale (20 MW) wind and solar testing and development, nuclear and hydropower energy development. IHMA: Designate and manage IHMA as avoidance areas for wind and solar testing and development, nuclear and hydropower development. GHMA **(Idaho)**: Designate and manage GHMA as open for wind and solar testing and development and nuclear and hydropower development subject to RDFs and buffers.	PHMA: Designate and manage PHMA as exclusion areas for utility scale (20 MW) wind and solar testing and development, nuclear and hydropower energy development. IHMA: Designate and manage IHMA as avoidance areas for wind and solar testing and development, nuclear and hydropower development. GHMA: Designate and manage GHMA as open for wind and solar testing and development and nuclear and hydropower development subject to BMPs.	Completely Revised
LANDS AND REALTY (LR)	***LANDS AND REALTY (LR)***	—
Objectives:	**Objectives:**	—
Objectives LR 1: Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.	Same as 2015	No change (same as 2015)
Management Decisions:	**Management Decisions:**	—
Utility Corridors and Communication Sites	Utility Corridors and Communication Sites	—
MD LR 1: <u>Utility Corridors and Communication Sites:</u> Existing designated corridors, including Section 368 Corridors, will remain Open in all habitat management areas (subject to the ongoing settlement agreement). Also see **MD LR 10** and **MD SSS 31**	Same as 2015	No change (same as 2015)

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
Land Use Authorizations	Land Use Authorizations	—
MD LR 2: PHMA: Designate and manage PHMA as ROW avoidance areas, consistent with MD SSS 29 and subject to RDFs and buffers (Appendices B and C). IHMA: Designate and manage IHMA as ROW avoidance areas, consistent with MD SSS 30 and subject to RDFs and buffers. GHMA: Designate and manage GHMA as open with proposals subject to RDFs and buffers.	PHMA: Designate and manage PHMA as ROW avoidance areas, consistent with MD SSS 29 and subject to RDFs and buffers (Appendices B and C). IHMA: Designate and manage IHMA as ROW avoidance areas, consistent with MD SSS 30 and subject to RDFs and buffers. GHMA: Designate and manage GHMA as open with proposals subject to best management practices as described in Appendix C.	Completely Revised
MD LR 3: PHMA: Development of commercial service airports and facilities (as defined by FAA 2014 – publicly owned airports that have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service) will not be allowed within PHMA. IHMA and GHMA are Avoidance and Open respectively for these types of ROW applications as described in MD LR 2.	Same as 2015	No change (same as 2015)
MD LR 4: PHMA: Development of new or expansion of existing landfills will not be allowed within PHMA. IHMA and GHMA are Avoidance and Open respectively for these types of ROW applications as described in MD LR 2.	Same as 2015	No change (same as 2015)
MD LR 5: Consistent with MD LR 3, MD LR 4, and MD RE 1, Rights-of-way for development of new or amended ROWs and land use authorizations (including permits and leases) in PHMA will only be considered when consistent with the Anthropogenic Disturbance Screening Criteria (MD SSS 29); Rights-of-way for development of new or amended ROWs and land use authorizations (including permits and leases) in IHMA can be considered consistent with the IHMA Anthropogenic Disturbance Development Criteria (MD SSS 30). GHMA: New ROW and land use authorizations can be considered.	Same as 2015	Partially Revised MD SSS 29 revised in Approved RMP Amendment, Table 1
MD LR 6: In PHMA, if a higher voltage transmission line is required adjacent to an existing line (i.e. the project is an incremental upgrade/capacity increase of existing development (i.e. power line capacity upgrade): • the existing transmission line must be removed and area rehabilitated within a specified amount of time after the new line is installed and energized; and • the new line must be constructed in the same alignment as the existing line unless an alternate route will benefit GRSG or GRSG habitat.	Same as 2015	No change (same as 2015)
MD LR 7: Process unauthorized use. If the unauthorized use is subsequently authorized, it will be authorized consistent with direction from this plan including RDFs and buffers. If the use is not subsequently authorized the site will be reclaimed by removing these unauthorized (trespass) features and rehabilitating the habitat.	Same as 2015	No change (same as 2015)
MD LR 8: Land use authorizations that are temporary (less than 3 years) in nature and are not otherwise excluded or restricted will be subject to seasonal or timing restrictions (**Appendix C**) and mitigation requirements regarding habitat loss as needed.	Same as 2015	No change (same as 2015)
MD LR 9: New ROW applications for water facilities (ditches, canals, pipelines), or amendments to existing water facilities which include additional structures to improve fish passage or benefits to fisheries (new diversions, fish screens) will be allowed on a case-by-case basis subject to RDFs to reduce impacts on GRSG habitat and mitigation requirements regarding GRSG habitat loss as needed.	Same as 2015	No change (same as 2015)
MD LR 10: When a ROW grant expires and is not requested to be renewed, is relinquished, or terminated, the lease holder will be required to reclaim the site by removing overhead lines and other infrastructure and to eliminate avian predator nesting opportunities provided by anthropogenic development on public lands associated with the now void ROW grant (e.g., remove power line and communication facilities no longer in service).	Same as 2015	No change (same as 2015)
MD LR 11: As opportunities and priorities indicate work with existing ROW holders to retrofit existing towers and structures consistent with RDFs described in **Appendix C**.	Same as 2015	No change (same as 2015)

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
MD LR 12: PHMA and IHMA are designated as avoidance areas for high voltage transmission line and large pipeline ROWs, except for Gateway West and Boardman to Hemingway Transmission Projects. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this proposed plan, including the RDFs and avoidance criteria presented in MD SSS 29 and MD SSS 30 of this document. The BLM is currently processing an application for Gateway West and Boardman to Hemingway Transmission Projects and the NEPA review for this project is well underway. Conservation measures for GRSG are being analyzed through the project's NEPA review process, which should achieve a net conservation benefit for the GRSG.	Same as 2015	Completely Revised (major ROWs) and as it applies to revised MD SSS 29 in Table 1
MD LR 13: Consider the likelihood of development of not-yet-constructed surface disturbing activities – as defined in Table 2 of the Monitoring Framework (**Appendix D**) – under valid existing rights.	Same as 2015	No change (same as 2015)
Land Tenure	Land Tenure	—
MD LR 14: Lands classified as PHMA, IHMA, and GHMA for GRSG will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide a net conservation gain to the GRSG or (2) the agency can demonstrate that the disposal, including land exchanges, of the lands will have no direct or indirect adverse impact on conservation of the GRSG. Land tenure adjustments will be subject to the following disposal, exchange, and acquisition criteria, which include retaining lands with GRSG habitat. Retention of areas with GRSG will reduce the likelihood of habitat conversion to agriculture, urbanization, or other uses that will remove sagebrush habitat and potentially impact sensitive plants. Criteria: a. Acquire habitat within PHMA and IHMA, when possible (i.e. willing landowner), and retain ownership of habitat within all Areas, except if disposal will allow for additional or more contiguous federal ownership patterns. b. Lands within PHMA, IHMA and GHMA will be retained unless disposal of those lands will increase the extent or provide for connectivity of PHMA, IHMA or GHMA. c. Evaluate potential land exchanges containing historically low-quality GRSG habitat that may be too costly to restore in exchange for lands of higher quality habitat, lands that connect seasonal GRSG habitats or lands providing for threatened and endangered species. These potential exchanges should lead to an increase in the extent or continuity of or provide for improved connectivity of PHMA. Higher priority will be given to exchanges for those in-tact areas of sagebrush that will contribute to the expansion of sagebrush areas within PHMA currently in public ownership. Lower priority will be given to other lands that will promote enhancement in the PHMA and IHMA (i.e., areas with fragmented or less in-tact sagebrush). d. Identify lands for acquisition that increase the extent of or provide for connectivity of PHMA.	Lands classified as PHMA, IHMA, and GHMA for GRSG will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide no net loss to the GRSG or (2) the agency can demonstrate that the disposal, including land exchanges, of the lands will have no direct or indirect adverse impact on conservation of the GRSG. Land tenure adjustments will be subject to the following disposal, exchange, and acquisition criteria, which include retaining lands with GRSG habitat. Retention of areas with GRSG will reduce the likelihood of habitat conversion to agriculture, urbanization, or other uses that will remove sagebrush habitat and potentially impact sensitive plants. Criteria: a. Retain lands within PHMA, IHMA and GHMA, unless disposal of those lands will increase the extent or provide for connectivity of PHMA, IHMA or GHMA. b. Evaluate potential land exchanges containing historically low-quality GRSG habitat that may be too costly to restore in exchange for lands of higher quality habitat, lands that connect seasonal GRSG habitats or lands providing for threatened and endangered species. These potential exchanges should lead to an increase in the extent or continuity of or provide for improved connectivity of PHMA. Higher priority will be given to exchanges for those in-tact areas of sagebrush that will contribute to the expansion of sagebrush areas within PHMA currently in public ownership. Lower priority will be given to other lands that will promote enhancement in the IHMA and GHMA (i.e., areas with fragmented or less in-tact sagebrush). c. Lands for acquisition increase the extent of or provide for connectivity of PHMA.	No change (same as 2019)
Withdrawals	—	—
See **MD SS 10** regarding Sagebrush Focal Areas (SFA).	—	No change (same as 2019).
RECREATION AND VISITOR SERVICES (REC)	***RECREATION AND VISITOR SERVICES (REC)***	—
Management Decisions:	**Management Decisions:**	—
REC-1: Manage existing recreation uses and sites to minimize adverse effects on GRSG or their habitat through incorporation of RDFs, buffers and seasonal restrictions.	Same as 2015	No change (same as 2015)
REC-2: In PHMA and IHMA, do not construct new recreation facilities (e.g., campgrounds, trails, trailheads, staging areas) unless the development will have a net conservation gain to GRSG habitat (such as concentrating recreation, diverting use away from critical areas, etc.), or unless the development is required for visitor health and safety or resource protection.	In PHMA and IHMA, do not construct new recreation facilities (campgrounds, parking lots, trailheads, and staging areas) larger than 0.25 acres unless subject to appropriate buffers and RDFs and appropriate mitigation. Locate and design new facilities to avoid or minimize impacts on GRSG habitat. New trails in PHMA and IHMA should be designed to avoid or minimize impacts on GRSG habitat. New non-motorized trails would not be subject to buffers but may be subject to timing restrictions to avoid impacts on GRSG during the lekking/nesting season. Motorized trails would also be subject to buffers and seasonal timing restrictions.	No change (same as 2019)

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
TRAVEL AND TRANSPORTATION (TMM)	***TRAVEL AND TRANSPORTATION (TMM)***	—
Management Decisions:	**Management Decisions:**	—
MD TTM 1: Limit off-highway vehicle travel within Idaho BLM Field Offices to existing roads, primitive roads, and trails in areas where travel management planning has not been completed or is in progress. This excludes areas previously designated as open through a land use plan decision or currently under review for designation as open, currently being analyzed in ongoing RMP revision efforts in the Four Rivers, Jarbidge and Upper Snake Field Offices.	Same as 2015	No change (same as 2015)
MD TTM 2: In PHMA, IHMA, and GHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use) and other applicable law and policy.	Same as 2015	No change (same as 2015)
MD TTM 3: Develop Travel Management Plans for each Field Office as described in the BLM Travel Management Handbook 8342.1 and according to the travel management planning guidelines (Appendix L of FEIS).	Same as 2015	No change (same as 2015)
MD TTM 4: During subsequent travel management planning design and designate a travel system to minimize adverse effects on GRSG. Locate areas and trails to minimize disturbance of GRSG and/or to have a neural or positive effect on GRSG habitat and populations. Give special attention to protect endangered or threatened species and their habitats. Allow for route upgrade, closure of existing routes, timing restrictions, seasonal closures, and creation of new routes to help protect habitat and meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning within PHMA will be placed on having a neutral or positive effect on GRSG habitat. Individual route designations will occur during subsequent travel management planning efforts.	Same as 2015	No change (same as 2015)
MD TTM 5: Conduct road construction, upgrades, and maintenance activities to avoid disturbance during the lekking season – see **Appendix C**.	Same as 2015	No change (same as 2015)
MITIGATION (IDAHO AND MONTANA)	***MITIGATION (MIT)***	—
(Also see **Appendix F** and **J**)	**See 2.12 Mitigation section below**	—
N/A	N/A	New: Objective MIT-1 added
Management Decisions:	**Management Decisions:**	—
MD MIT 1: BLM will establish an inter-agency State GRSG Conservation Team at the state level to help guide conservation of GRSG through compensatory mitigation, within 90 days of the issuance of the Record of Decision.	Same as 2015	No change (same as 2015)
MD MIT 2: The BLM, in coordination with the GRSG Conservation Team will develop a Mitigation Strategy within one year of the issuance of the Record of Decision. In Idaho this strategy will be consistent with the Idaho Mitigation Framework (**Appendix F**).	Same as 2015	No change (same as 2015)
MD MIT 3: In all GRSG habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation (**Appendix E**, Table E-1), the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation.	In PHMA, IHMA, and GHMA, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation (**Appendix E**, Table E-1), the BLM will work towards achieving the planning-level GRSG management goals and objectives through implementation of mitigation and management actions. Under this Proposed Plan Amendment, the BLM's GRSG management would be consistent with the GRSG goals and objectives, and in conformance with BLM Manual 6840, *Special Status Species Management*, undertake planning decisions, actions, and authorizations to "minimize or eliminate threats affecting the status of GRSG or to improve the condition of GRSG habitat" across the planning area. Further, the BLM recognizes that the State of Idaho's state sage-grouse management goals and policies include mitigation that provides no net loss to GRSG, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by ensuring GRSG habitat impacts are addressed by implementing mitigating actions in coordination with the State of Idaho and the Proposed Plan Amendment.	Partially revised - updated regulation and policy references
MD MIT 4: Mitigate anthropogenic development (**Appendix E**, Table E-1) impacts on GRSG habitat through application of appropriate mitigation in accordance with the Mitigation Framework (**Appendix F** and **L**).	Same as 2015	Completely Revised

2015 BLM GRSG Approved RMP Amendment	2019 BLM GRSG Approved RMP Amendment	2025 BLM GRSG Approved RMP Amendment
MD MIT 5: Consistent with regulations for minerals activities, require a full reclamation bond specific to the site when surface disturbing activities are proposed. Ensure reclamation bonds are sufficient to cover costs to fully rehabilitate lost GRSG habitat. Base the reclamation costs on the assumption that contractors for the BLM will perform the work. Areas are considered fully rehabilitated when they meet the conditions described in Table 2-2.	Same as 2015	No change (same as 2015)
COORDINATION (CC)	***COORDINATION (CC)***	—
Management Decisions:	**Management Decisions:**	—
MD CC 1: Collaborate, coordinate and utilize cooperative planning efforts to implement and monitor activities to achieve desired conditions and to maximize the utilization of available funding opportunities. Coordination efforts can include: adjacent landowners, federal and state agencies, local governments, tribes, communities, other agencies, resource advisory groups, public lands permit holders and non- governmental organizations.	Same as 2015	No change (same as 2015)
MD CC 2: Develop a cooperative MOU between the BLM, Forest Service and State of Idaho to establish the State of Idaho as a cooperating agency during implementation of the final decision. The MOU will identify responsibilities, role and interaction of the BLM, Forest Service and State of Idaho.	Same as 2015	No change (same as 2015)
MD CC 3: The BLM will consider any recommendations from the Governor of Idaho as a result of evaluation completed by the Sage-Grouse Implementation Task Force.	Same as 2015	No change (same as 2015)
MD CC 4: Idaho: The BLM will coordinate with the State of Idaho and the Idaho Sage-Grouse Implementation Task Force regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring, related to adaptive management, anthropogenic disturbance and livestock grazing.	Same as 2015	No change (same as 2015)
MD CC 6: Upon completion of the Record of Decision the BLM will develop an initial Implementation Guide for BLM District and Field Offices within a year of issuance of the Record of Decision. This Guide will define and describe consistent application of the allocations, management actions, required design features, and etc. that are contained within the final plan and will be updated and expanded as needed to respond to issues and concerns.	Same as 2015	No change (same as 2015)
MD CC 7: At the state level, BLM will coordinate with IDFG, USFWS, and other conservation partners in collaborative efforts with adjacent states (Oregon, Nevada, Utah, Montana, Wyoming) in GRSG MZs IV and II to evaluate GRSG habitat and population status and trends and make appropriate regional recommendations for GRSG conservation at broader scales.	Same as 2015	No change (same as 2015)
MD CC 8: At the state level, BLM will coordinate with the appropriate WAFWA Sage-grouse Technical Committee to develop consistent population and habitat monitoring approaches that facilitate GRSG conservation at the MZ scale.	Same as 2015	No change (same as 2015)
MD CC 9: All prescribed burning will be coordinated with state and local air quality agencies to ensure that local air quality is not significantly impacted by BLM activities.	Same as 2015	No change (same as 2015)

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RELEVANT APPENDICES

The following table shows which appendices from the 2015 and 2019 plans have management direction that will change as a result of the Approved RMP Amendment. If 2019 is not listed in the year, then no change was made to the appendix between the 2015 and 2019 plans. The appendices can be found on the Idaho GRSG ePlanning website.

ARMPA Appendix Name	Year	2025 BLM GRSG Approved RMP Amendment
A: Approved RMP Amendment Maps	2015, 2019	Completely Revised
B: Buffers	2015, 2019	Completely Revised
C: Required Design Features	2015, 2019	Partially Revised- Applies livestock grazing BMPs
D: Monitoring Framework	2015	Completely Revised
E: Anthropogenic Disturbance and Adaptive Management	2015, 2019	Partially Revised- Applies disturbance cap and adaptive management approaches
F: Mitigation	2015, 2019	Completely Revised
G: Fluid Mineral Lease Stipulations, Waivers, Modifications, and Exceptions	2015	Partially Revised- Applies exceptions, modifications, and waivers
H: Fire and Invasives Assessment Tool (FIAT)	2015	No change (same as 2015)
K: Technical and Policy Teams	2019	Completely Revised

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Appendix 3

Greater Sage-grouse Monitoring Framework

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Appendix 3. Greater Sage-grouse Monitoring Framework

3.1 FORWARD

The revised Bureau of Land Management (BLM) Greater Sage-Grouse (GRSG) Monitoring Framework was developed after five years of implementing the 2015 BLM and United States Forest Service (USFS) GRSG Monitoring Framework which culminated in the 2020 Greater Sage-Grouse Five-year Monitoring Report. Since implementing the monitoring efforts described in the original Monitoring Framework, new data has become available and new approaches to analyzing these data have been developed. This update maintains the existing measures included in the original document and expands upon them to include this new science. Measures for monitoring are identified at two scales: the rangewide scale and land use plan (LUP) scale. The former will provide insight into habitat conditions and BLM management actions across jurisdictional boundaries which will, in turn, provide context to the smaller scale LUP monitoring described herein. For each scale of monitoring a suite of 6 measures are identified and a methodology which the BLM will utilize to collect information informing each measure is described. Importantly, specific datasets and analysis approaches may be modified through the implementation of this monitoring framework so that BLM can adapt to new information as it becomes available. The data collected and analyzed for each of the measures described at both scales will vary in spatial extent. For example, measures leveraging remotely sensed data can and will be examined across all habitat management areas (HMAs) within the planning area as well as the BLM managed subset of these habitats. Other measures will apply specifically to BLM managed habitats or subsets thereof (i.e. disturbance and density caps). Further, LUP decisions may identify specific spatial extents at which some measures are analyzed and tracked, such as to inform adaptive management threshold status. As such, during the implementation of this monitoring framework, the spatial extent of all monitoring and analyses addressing the identified measures will be documented and communicated during effectiveness evaluation efforts.

This Monitoring Framework is related to several other pieces of larger LUPs and associated management direction they provide. The GRSG Monitoring Framework leverages data, information, and assessments to monitor LUP implementation. Appendix 4 of this LUP establishes GRSG habitat objectives, indicators, and benchmarks. These indicators and benchmarks are utilized in the Habitat Assessment Framework (HAF). The results of these habitat assessments inform the wildlife and/or sensitive species component of the Land Health Standards (LHS) evaluation process (43 CFR 4180.2). The GRSG Monitoring Framework provides a consistent format for reporting if the LUP objectives are being met or making progress to being met, based on the results of these assessment and planning tools.

Table 3-1. Relationships of LUPs, HAF, LHS, and Monitoring Framework

LUP	GRSG HAF	LHS Evaluation	GRSG Monitoring Framework
Sets GRSG habitat objective(s) and identifies the GRSG habitat indicators and benchmarks from best available science for evaluating progress toward meeting the objective.	Provides methods to assess GRSG habitats at multiple scales, using the indicators and benchmarks from the applicable LUP Habitat Indicators appendix.	Evaluates if the sage-grouse portion of the Special Status Species/Wildlife Habitat (SSS/WL) LHS is achieved or significant progress towards achievement is made. These evaluations utilize HAF results along with other data.	Provides framework for reporting progress toward achieving the objective(s) of the LUP, including habitat suitability.

3.2 SECTION I: RANGEWIDE MONITORING

3.2.1 Introduction

This rangewide monitoring section of the BLM Revised GRSG Monitoring Framework is an update from the original BLM and USFS GRSG Monitoring Framework (2015) expands and clarifies the BLM's GRSG rangewide habitat condition monitoring and reporting. Described here are the six measures (**Table 3-2**), and associated updated methodologies, incorporating the original monitoring measures from 2015 (habitat condition and habitat degradation) with additional measures (land cover, habitat indicators, habitat suitability and population trend) that guide the BLM's GRSG monitoring and reporting.

The information gathered from monitoring and reporting on the six rangewide measures (**Table 3-2**) is intended to inform an evaluation of BLM's effectiveness (Section III of this BLM Revised GRSG Monitoring Framework) toward meeting the BLM's overarching goal for GRSG: *to conserve and manage GRSG habitats to support persistent, healthy populations, consistent with BLM's sensitive species policy and in cooperation with other conservation partners. Conservation and management should maintain existing connectivity between GRSG populations.*

Table 3-2. The Six Rangewide Monitoring Measures, Associated Sub-Measures, Monitoring Questions and Data Sources for BLM Monitoring of GRSG Habitat Conditions and Population Trends

Measures	Monitoring Questions	Data
Measure 1: Vegetation Availability and Condition		
Measure 1a: Vegetation Condition and trend	What is the status and trend of the habitat indicators describing habitat characteristics important to GRSG as well as ecological threats to GRSG (e.g., annual invasive grasses, bare ground) on BLM lands?	BLM Assessment, Inventory, and Monitoring (AIM)
Measure 1b: Current and Historical Amounts of Sagebrush	What is the current versus historical extent of sagebrush within GRSG habitat? How have recent disturbances (fires and treatments) affected the extent of sagebrush?	LANDFIRE
Measure 1c: Percent Sagebrush Cover and Trend	What is the percent cover of sagebrush and trend in sagebrush percent cover?	Rangeland Condition Monitoring Assessment and Projection (RCMAP)
Measure 1d: Percent Annual Herbaceous Cover and Trend	What is the percent cover and trend of annual herbaceous cover?	RCMAP

Measures	Monitoring Questions	Data
Measure 1e: Percent Tree Cover within Sagebrush	What is the percent cover and trend of tree cover in sagebrush communities?	RCMAP
Measure 2: Habitat Degradation and Development Intensity in GRSG Habitat		
Measure 2a: Habitat degradation	What is the estimated amount of habitat degradation rangewide and the estimated change in the amount?	Geospatial analysis using datasets representing anthropogenic development
Measure 2b: Intensity of degradation	What is the estimated density of energy development activities and the change in the estimated density?	Geospatial analysis using datasets representing anthropogenic development
Measure 2c: Degradation cap compliance	Were any disturbance or density caps above project scale exceeded?	Geospatial analysis using datasets representing anthropogenic development
Measure 2d: Reclamation	What is the amount of reclaimed energy-related degradation on BLM lands and the change in the amount?	Geospatial analysis using datasets representing reclamation on BLM-managed lands
Measure 3: GRSG Habitat Suitability		
Measure 3a: Habitat assessment status	What is the status of GRSG habitat assessments at the mid- and fine-scales across the range?	BLM's HAF tracking system
Measure 3b: Habitat suitability at mid and fine scales	What is the suitability of GRSG habitats at mid and fine spatial scales across the range?	BLM's HAF tracking system
Measure 4: Achievement of LHS in GRSG Habitat		
Measure 4a: Status of land health evaluations	How many acres were evaluated for achievement of the SSS/WL LHS in GRSG habitat across the range?	BLM's LHS Database
Measure 4b: Status of LHS	For areas that have been evaluated in GRSG habitat, what is the status of land health and what are the causes of non-achievement (as applicable)?	BLM's LHS Database
Measure 5: BLM On-The-Ground Conservation and Restoration Efforts for GRSG		
Measure 5a: Summary of conservation efforts	How many acres/miles were conserved or restored by treatment or action type in GRSG habitat across the range?	National Fire Plan Operations and Reporting System/Vegetation Management Action Portal, Other BLM Project Tracking
Measure 6: GRSG Population Trend Rangewide		
Measure 6a: Annual Range-wide Trend	What is the rangewide average annual population trend?	United States Geological Survey (USGS) Rangewide Population Trend Analysis for GRSG
Measure 6b: Cumulative Range-wide Trend	What is the rangewide cumulative population trend?	USGS Rangewide Population Trend Analysis for GRSG

3.2.2 Methods

The datasets used, and the land ownerships included in the data, vary by monitoring type. For example, the monitoring of habitat indicators uses on-the-ground data and information from BLM lands only. Conversely, the rangewide monitoring of landcover, sagebrush availability and disturbance use geospatial data covering all land ownerships. The population trend monitoring uses state wildlife agencies' data that also covers all land ownership in GRSG habitat. Best available datasets outlined here will be used to analyze the monitoring measures and for reporting on GRSG habitat however BLM reserves the right to change data and analysis methods as it deems appropriate.

Measure 1. Vegetation Availability and Condition

Sagebrush availability and vegetation condition analyses are analyzed rangewide for GRSG, excluding the Bi-State Distinct Population Segment and the Columbia Basin population. Analyses differ in the timeframe and type of data used (remotely sensed products versus collected on the ground), the lands to which the analyses apply (all lands versus BLM-managed lands), and in GRSG habitat.

Datasets selected for monitoring must meet key criteria to ensure consistent and accurate monitoring:

- The dataset must be consistent rangewide
- There must be a known accuracy level or level of confidence for the dataset
- The dataset must be based in peer-reviewed science
- The dataset must be maintained and have a known update plan
- The dataset must be readily available
- Consistent methodology must have been used to derive datasets that are compared; different datasets may be used to calculate different measures.

The following datasets, which meet the key criteria, should be analyzed for Measure 1; however, additional data and analyses may also be considered, if justified and documented:

1. BLM AIM for 1a,
2. LANDFIRE (Picotte et al. 2016) for 1b and
3. RCMAP (Rigge et al. 2022) for 1c, 1d, and 1e.

We considered three types of fractional datasets for calculating Measures 1c, 1d, and 1e. Fractional datasets contain pixels or cells that represent areas on the ground which may each contain vegetation cover types such as sagebrush, trees, or herbaceous. A fractional dataset represents the percentage of one vegetation cover type that is present in each pixel (e.g., 50 percent sagebrush, 25 percent trees, or 25 percent herbaceous). The three datasets considered, that are new since the 2015 BLM/USFS GRSG Monitoring Framework, are:

- Landscape Cover Analysis and Reporting Tools (LandCART; Zhou et al. 2020),
- Rangeland Analysis Program (RAP; Allred et al. 2021), and
- RCMAP.

Accuracies and applicability for the three types of datasets are similar but mixed. BLM Tech Note 456, which compares these datasets, recommends that users consider their individual data needs and uses when selecting from them (Savage et al. 2022). **Table 3-3** summarizes some characteristics of the datasets specifically considered for this BLM Revised GRSG Monitoring Framework and, although not comprehensive, reflects the intent to use RCMAP. RAP does not have a sagebrush dataset and it is currently difficult to obtain rangewide data from LandCART but improvements are in progress. Importantly, BLM partners with USGS to fund RCMAP, ensuring the reliability of readily available data, regular updates and maintenance, and data suited for use in this BLM Revised GRSG Monitoring Framework. See **Appendix B, Table B2** for the RCMAP Accuracy Assessment. We recommend using only one data type (for 1c, 1d, & 1e) such that data can be overlaid or compared without concern for different methods that created the data. If additional fractional datasets become available and fit the key criteria above, they may be considered for use in calculating the Measures 1c, 1d, and 1e.

Table 3-3. Dataset Characteristics For Measure 1c, 1d, And 1e

Dataset Characteristics	LandCART	RAP	RCMAP
Annual herbaceous	Y	Y	Y
Sagebrush	Y	N	Y
Tree cover	Y	Y	Y
Rangewide extent	Difficult	Y	Y
Trend	Y	User calculates	Y

Measure 1a: What is the status and trend of the habitat indicators and threats to GRSG (e.g., non-native invasive grasses, bare ground) on BLM lands?

The vegetation condition monitoring is based on estimates for 6 GRSG habitat indicators (e.g., sagebrush cover) and estimates of 7 threat indicators (e.g., invasive species) (Herrick et al. 2017). These estimates will be based on field data collected through the BLM's national monitoring efforts on BLM-managed rangeland ecosystems. These data are part of the AIM program including the National AIM Survey (also known as the Landscape Monitoring Framework, Yu Li et al. 2020 and generally described in Karl et al. 2016). The AIM estimates provide consistent and standardized data about vegetation conditions broadly across the range.

The 6 GRSG habitat indicators are:

1. Percent cover of sagebrush
2. Mean sagebrush species height
3. Proportion of sagebrush that is spreading shaped
4. Percent cover of perennial grasses and perennial forbs
5. Mean herbaceous plant species height
6. Percent of lands where native plants make up 95 percent or more of vegetation cover

The 7 threat indicators are:

1. Proportion of sagebrush that is columnar shaped
2. Percent cover of bare ground
3. Proportion of nonnative invasive species present
4. Proportion where greater than or equal to 5 percent of foliar cover is comprised of nonnative invasive species

5. Proportion of vegetation composed of annual grasses
6. Proportion of vegetation composed of nonnative invasive plant species
7. Percent of lands with greater than 3 percent cover of pinion – juniper.

The vegetation condition summary is reported for BLM-managed GRSG habitats. Also of importance is that the data is collected in areas that retain rangeland vegetation and exclude areas physically converted to agriculture or disturbance from development.

The estimates combine indicator data from all sampling locations collected within a given year. An analysis for trend will be performed for each of these indicators. Analysis details will be included in monitoring reports.

Measure 1b: What is the current versus historical extent of sagebrush within the range of GRSG? How have recent disturbances affected the extent of sagebrush?

Measure 1b estimates both historic and current extent of sagebrush. The datasets to calculate these metrics are the most recent LANDFIRE Biophysical Setting (BpS), Existing Vegetation Type (EVT), Existing Vegetation Cover (EVC), and Existing Vegetation Height (EVH). EVT will be adjusted for recent fires and BpS will be adjusted for sagebrush areas in EVT (see below for details). LANDFIRE data meets the key criteria defined above and has ample thematic resolution with several different sagebrush vegetation classes. For the 2015 Monitoring Framework, vegetation classes from LANDFIRE EVT and BpS were selected to use in the sagebrush and sagebrush potential or historic layers by identifying the classes that include sagebrush species and that could provide suitable seasonal habitat for GRSG (See **Appendix A, Table A1**). In these classes, sagebrush may not be the dominant species, but it is an attempt to include the maximum likely geographic extent and some of the uncertainty on the ground captured by products derived from remotely sensed data (see **Appendix B, Table B1** for Agreement Assessment details). The sagebrush layer used for reporting will be created using these selected classes from EVT. The following two metrics will be reported for each year:

1) 1.b.1. The amount of sagebrush in GRSG habitat compared with the amount of sagebrush that GRSG habitat could historically support without disturbance, that is, the existing sagebrush versus the potential sagebrush. The measure will be calculated as [the existing area of sagebrush] divided by [the potential area of sagebrush expected pre-Euro American settlement]. The data will be summarized including a histogram, mean and standard deviation, and median and quartiles for GRSG habitat.
2) 1.b.2. Recent vegetation treatments (National Fire Plan Operations and Reporting System and Vegetation Management Action Portal data) are integrated into some LANDFIRE data causing changes in EVH and EVC datasets but these changes are not reflected in EVT for now, although this may change (personal communication Daryn Dockter, Brian Tolk, May 2023). BLM will use EVH and EVC with EVT to determine how recent treatments affect the extent of sagebrush using the guidelines:
    a. If EVT = sagebrush but EVH or EVC = 0 for shrubs, then disturbance has likely removed the sagebrush. These pixels will be removed from the EVT dataset annually.
    b. If EVT = sagebrush and EVH = grass less than 1.0 meter, past disturbance has likely removed the sagebrush and grass or forbs are growing. These pixels will be removed from the EVT dataset annually.
    c. If EVT = sagebrush and EVH = shrub 1 to 3 meters then there is likely sagebrush here. These pixels will be retained in the EVT dataset annually.

d. These changes will be summarized across GRSG habitat.

LANDFIRE EVT includes fires burned up to the end of the previous fiscal year so updates will be needed for more recent fires and can be made using NIFC WFIGS *yyyy*, Interagency Fire Perimeters to Date (where *yyyy* is the current year). LANDFIRE processes postfire change detection using satellite imagery and Monitoring Trends in Burn Severity program. See below for LANDFIRE data accuracy and update details.

In EVT there are small areas that show sagebrush and sagebrush associated classes which are not matched in the BpS dataset. Based on the assumption that sagebrush is unlikely to expand in the short term, we assume that BpS is in error and these classes in BpS need to be adjusted to the classes shown in EVT. This adjustment supports the simple division of existing by potential sagebrush that is described above.

Because of concerns over the thematic accuracy of individual classes mapped by LANDFIRE, all ecological systems listed in **Appendix A, Table A1** will be aggregated into three groups that represent sagebrush, sagebrush associated, and other vegetation types. With all ecological systems aggregated, the combined accuracy, measured as an agreement assessment, of the sagebrush base layer (EVT) will be much greater than if all categories were treated separately (LANDFIRE 2016 Remap EVT Agreement Assessment). We used the Southwest (Arizona, California, Nevada, Utah, west Colorado, and west New Mexico) and Northwest GeoAreas (Idaho, Montana, Oregon, Washington, and Wyoming) to estimate sagebrush assessment agreements where sagebrush, sagebrush associated, and other field data are assigned autokeys and these are compared to LANDFIRE EVT (**Appendix B, Table B1**). The Southwest GeoArea agreement assessments were 55 percent for sagebrush, and 50 percent for sagebrush associated. The Northwest GeoArea agreement assessments were 69 percent for sagebrush and 57 percent for sagebrush associated.

LANDFIRE maintains a substantial disturbance spatial database using agency and other data; refinements to the process were made in 2020 with plans to update annually. LANDFIRE also uses National Landcover Database (NLCD) roads and urban classes, the Monitoring Trends in Burn Severity program, Burned Area Reflectance Classification data, and Rapid Assessment of Vegetation Condition after Wildfire data to apply changes to the database on a yearly basis. LANDFIRE uses a change algorithm to account for fires and models postfire vegetation recovery. While LANDFIRE intends to update annually, refinements may still be made to the EVT data for more recent changes due to wildfire (see above) and anthropogenic disturbances such as agriculture and urban, using the processes and datasets recommended below.

LANDFIRE uses the NLCD (Fry et al. 2011) to make urban adjustments including imperviousness dataset; high, medium, and low development; roads; open space; and broad vegetation types. NLCD is prioritized over other datasets if there is a discrepancy in land cover. NLCD impervious data has a roads description including primary, secondary, and tertiary; two track roads are not included. NLCD obtains building footprints from Microsoft data and USGS processing. NLCD data are generated on a 5-year cycle and are specifically designed to support monitoring efforts but the lag in NLCD may limit LANDFIRE data. To determine agricultural areas and types, LANDFIRE uses the annually updated National Agricultural Statistics Service Cropland Data Layer. The LANDFIRE disturbance processing will also pick up agricultural expansion and treatments when they are reported.

Measure 1c: What is the percent cover of sagebrush and trend in sagebrush percent cover?
Sagebrush fractional cover data will be used to estimate the current proportion of sagebrush in GRSG habitat. The most recent RCMAP fractional sagebrush cover will be used to calculate this measure (Rigge et al. 2022).

For each year of monitoring, the statistical distribution of percent sagebrush cover will be calculated and reported including a histogram, mean and standard deviation, and median and quartiles at spatial scales relevant to BLM LUP decisions and management, for example, HAF fine-scale extents. If updated literature suggests levels of percent sagebrush cover that are more appropriate to GRSG, these thresholds will be applied in addition to the standards described above. For example, if less than the literature-specified threshold of sagebrush is determined to be unsuitable for GRSG across GRSG habitat, an assessment of the area of and distribution that is above and below this cover threshold will be conducted.

Shi et al. (2022) modeled time-series trends in RCMAP continuous vegetation using two methods: 1) linear regression and 2) breaks and stable states modeling. We recommend using the linear trends results because, while accuracy was similar between the two modeling versions, linear trend results are more easily interpreted (Shi et al. 2022). For each pixel in the linear trends data, the slope represents the average percent cover change and the p-value is the confidence in the change value for each year. Within GRSG habitat, the trend of sagebrush cover will be monitored using the time-series linear trends data from RCMAP for all years of data to calculate the summary statistics as described above.

Measure 1d: What is the percent cover and trend of annual herbaceous cover?

The most recent RCMAP Annual Herbaceous fractional data will be used to estimate the current area, distribution, and proportion of annual forbs and grasses in GRSG habitat. In the Western US, the RCMAP annual herbaceous dataset primarily represents annual invasive species such as Cheatgrass, Medusahead, Red Brome, and annual mustards (Multi-Resolution Land Characteristics Consortium RCMAP website, https://www.mrlc.gov/data/rcmap-annual-herbaceous-cover-1, accessed March 2023). At higher elevations and in California, the annual herbaceous cover dataset may also represent native annual herbaceous vegetation types (Multi-Resolution Land Characteristics Consortium RCMAP website, https://www.mrlc.gov/data/rcmap-annual-herbaceous-cover-1, accessed March 2023).

For each year of monitoring, the statistical distribution of percent annual herbaceous cover will be calculated including a histogram, the mean and standard deviation, and median and quartiles at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents. If updated literature suggests levels of percent annual herbaceous cover that are more appropriate to GRSG, apply these thresholds in addition to the standards described above. For example, if less than the literature-specified threshold of annual herbaceous cover is determined to be unsuitable for GRSG across GRSG habitat, assessments of and distribution of annual herbaceous cover that is above and below this cover threshold will be conducted.

The trend of annual herbaceous cover will be reported for all years of data using the annual time-series linear trends data from RCMAP to calculate the summary statistics described above. The trend of annual herbaceous cover will be compared to the trend in sagebrush cover in GRSG habitat.

Measure 1e: What is the percent cover and trend of tree cover in sagebrush communities?

Over the past several decades, many studies have found that GRSG avoid habitat near conifers (Nisbet et al. 1983, Doherty et al. 2010; Fedy et al. 2014; Doherty et al. 2016; Westover et al. 2016; Baxter et al. 2017; Picardi et al. 2020; Roth et al. 2022), survival tends to increase when GRSG inhabit areas further away from conifers (Brussee et al. 2022), and populations have increased when conifers are removed (Olsen et al. 2021).

For the purposes of the Monitoring Framework, an upper limit threshold is needed to determine the percent of conifer cover within a certain distance of sagebrush that still provides suitable habitat for GRSG (see **Appendix C, Table C1** for summaries). Peer-reviewed findings are summarized in the following bullets:

- **0 percent** In Nevada, GRSG preferred areas with no conifer cover for lekking (Nisbet et al. 1983) and for brood rearing to areas with 1 to 10 percent conifer cover (Brussee et al. 2022).
- **2 percent** In California, GRSG preferred less than 2 percent conifer cover year-round (Coates et al. 2017). In Nevada and Utah, GRSG preferred areas with less than 2 percent conifer cover for breeding and summer season (Beers et al. 2022).
- **3 percent** In Oregon and Utah, less than 3 percent conifer was found to be more suitable for GRSG lekking and nesting within 800 meters and 1000 meters (Cook et al. 2017), within 560 meters for lekking (Doherty et al. 2021), and within 800 meters for nesting (Severson et al. 2017).
- **4 percent** In Oregon, Nevada, and Utah, areas with less than 4 percent conifer cover were found to be more suitable for nesting (Sandford et al. 2017; Severson et al. 2017) or found to be more suitable year-round within 400 meters and 800 meters and while there was sagebrush contiguity (Beers et al. 2022). Areas with greater than 4 percent conifer cover had no active leks (Baruch-Mordo et al. 2013) or were found to be less suitable for lekking (Cook et al. 2017).

We examined other work that obtained values outside of this range and determined that they were not useful for our purposes. In California, large-scale evidence suggested that GRSG avoided areas with greater than 5 percent conifer cover for brood rearing; however, 5 percent was set as a value instead of being determined by the data, and subsequent modeling was inconclusive (Casazza et al. 2011). In Nevada and Utah, Beers et al. (2022) found that during winter, GRSG selected areas with less than 11 percent conifer cover, but year-round 4 percent was a more appropriate threshold. In Nevada, GRSG avoided areas with greater than 30 percent conifer cover and selected areas with 10 to 30 percent cover within 1000 meters; the authors speculated that these unusually high conifer cover values may have been in areas where heterogenous shrub communities thrived and, in the absence of predators, attracted GRSG (Gibson et al. 2015).

The range of 0 to 4 percent of tree canopy cover has been shown to have the lowest impacts on GRSG year-round in several states (**Appendix C, Table C1**). Within GRSG habitat the extent and summary statistics (histogram, mean and standard deviation, and median and quartiles) of tree cover that is within 1000m of sagebrush and 1) less than 4 percent and 2) greater than 4 percent will be calculated.

Within GRSG habitat, the trend of tree cover that is greater than 4 percent and is within 1000 meters of sagebrush will be calculated and reported for all years of data using the annual time-series linear trends data from RCMAP to calculate the summary statistics described above. The trend of tree cover will be compared to the trend in sagebrush cover in GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents.

Measure 2. Habitat Degradation and Development Intensity in GRSG Habitat

Rangewide disturbance estimates

The measure of habitat degradation will be calculated by combining estimated footprints of, or the counts of, threats identified in **Table 3-4** within GRSG habitat. Footprints are estimated to be the direct area of influence of "active" energy and infrastructure and, in combination with feature counts, will be used as a surrogate for human activity. Data sources for each threat are found in **Table 3-4**, Geospatial Data Sources for Habitat Degradation and Intensity Calculations (Measure 2) in GRSG Habitat Excluding the Bi-State

Distinct Population Segment and the Columbia Basin Population. Specific assumptions (inclusion criteria for data, width/area assumptions for point and line features, etc.) and methodologies are described below. All datasets will be updated annually to monitor changes through time and to inform adaptive management.

Table 3-4. Geospatial Data Sources for Habitat Degradation and Intensity Calculations (Measure 2) in GRSG Habitat Excluding the Bi-State Distinct Population Segment and the Columbia Basin Population

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil and gas)	Wells	Information Handling Services (IHS); BLM Automated Fluid Minerals Support System (AFMSS)	5.0 acres (2.0 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	5.0 acres (2.0 hectares)	BLM WO-300
Energy (coal)	Mines	BLM; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/ Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	3.0 acres (1.2 hectares)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3 acres (3.0 hectares)/mega watt	National Renewable Energy Laboratory
Energy (geothermal)	Wells	IHS	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7 feet (12.4 meters)	USGS
	Major Roads	Esri StreetMap Premium	84.0 feet (25.6 meters)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2 feet (73.2 meters)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8 feet (9.4 meters)	USGS
Infrastructure (power lines)	1 to 199 kilovolt (kV) Lines	Platts (transmission lines)	100 feet (30.5 meters)	BLM WO-300
	200 to 399 kV Lines	Platts (transmission lines)	150 feet (45.7 meters)	BLM WO-300
	400 to 699kV Lines	Platts (transmission lines)	200 feet (61.0 meters)	BLM WO-300

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
	700+ kV Lines	Platts (transmission lines)	250 feet (76.2 meters)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5 acres (1.0 hectares)	BLM WO-300
Infrastructure (other vertical structures)	Tall Structures	Federal Avian Administration	2.5 acres (1.0 hectares)	Knick et al. 2011

Rangewide Habitat Degradation Datasets and Assumptions

Energy (Oil and Gas Wells and Development Facilities)

This dataset will compile information from three oil and gas databases: the proprietary IHS database, the BLM Automated Fluid Minerals Support System (AFMSS) database, and the proprietary Platts (a McGraw-Hill Financial Company) GIS (hereafter, Platts) database of power plants.

Point data from wells active within the last 10 years from IHS and producing wells from AFMSS will be considered as a 5-acre (2.0-hectare) direct area of influence centered on the well point, as recommended by the BLM WO-300 (Minerals and Realty Management). Plugged and abandoned wells will be separated from the active oil and gas well dataset but retained for analysis inclusion if the date of well abandonment was before the first day of the reporting year (i.e., for the 2015 reporting year, a well must have been plugged and abandoned by December 31, 2014 to be removed).

Platts oil and gas power plants data (subset to operational power plants) will also be included as a 5-acre (2.0-hectare) direct area of influence.

Wells marked as plugged and abandoned within the last 10-years will also be segregated from the "active" and "active within the last 10 years" well data described above. These data attempt to quantify energy-related degradation that may have been reclaimed, but not necessarily fully restored to sage-grouse habitat. Direct area of influence will be considered 3 acres (1.2 hectares) (J. Perry, personal communication, February 12, 2014).

Energy (Coal Mines)

Currently, there is no comprehensive dataset available that identifies the footprint of active coal mining across all jurisdictions. Therefore, point and polygon datasets will be used each year to identify coal mining locations. Data sources will be identified and evaluated annually and will include at a minimum: BLM coal lease polygons, United States (U.S.) Energy Information Administration mine occurrence points, U.S. Office of Surface Mining Reclamation and Enforcement coal mining permit polygons (as available), and USGS Mineral Resources Data System mine occurrence points. These data will inform where active coal mining may be occurring.

Coal power plant data from Platts power plants database (subset to operational power plants) will be included. Aerial imagery will then be used to digitize manually the active coal mining and coal power plants surface disturbance in or near these known occurrence areas. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to digitize (generally at 1:10,000 and below) active coal mine and power plant direct area of influence. Coal mine location data source and imagery date will be documented for each digitized coal polygon at the time of creation. Subsurface facility locations (polygon or point location as available) will also be collected if available, included in density

calculations, and added to the active surface activity layer as appropriate (if an actual direct area of influence can be located).

Energy (Wind Energy Facilities)

This dataset will be a subset of the Federal Aviation Administration (FAA) Digital Obstacles point file. Points where attribution indicates the feature is a windmill will be included. The direct area of influence of these point features will be a circular totaling 3 acres (1.2 hectares) centered on each tower point. See the BLM's "Wind Energy Development Programmatic Environmental Impact Statement" (BLM 2005). Additionally, the Platts power plants database will be used for transformer stations associated with wind energy sites (subset to operational power plants), also with the same 3-acre (1.2-hectare) direct area of influence.

Energy (Solar Energy Facilities)

This dataset will include solar plants as compiled with the Platts power plants database (subset to operational power plants). This database includes an attribute that indicates the operational capacity of each solar power plant. Total capacity at the power plant was based on ratings of the in-service unit(s), in megawatts. Direct area of influence polygons will be centered over each point feature representing 7.3 acres (3.0 hectares) per megawatt of the stated operational capacity, per the report of the National Renewable Energy Laboratory, "Land-Use Requirements for Solar Power Plants in the United States" (Ong et al. 2013).

Energy (Geothermal Energy Facilities)

This dataset will include geothermal wells in existence or under construction as compiled with the IHS wells database and power plants as compiled with the Platts database (subset to operational power plants). Direct area of influence of these point features will be measured by converting to a polygon dataset of 3 acres (1.2 hectares) centered on each well or power plant point.

Mining (Active Developments; Locatable, Leasable, Saleable)

This data theme is notably lacking in a comprehensive source spanning the range of GRSG. Currently, there are no known complete databases available for leasable or saleable mining sites beyond coal mines. Aerial imagery will be used to manually digitize large active mining surface disturbance in or near known occurrence areas originally informed by the proprietary InfoMine database. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to digitize (generally at 1:10,000 and below) active mine direct area of influence. Mine location data source and imagery date will be documented for each digitized polygon at the time of creation. Other data sources will be evaluated and used as they are identified or as they become available. Point data may be converted to polygons to represent direct area of influence unless actual surface disturbance is available.

Infrastructure (Roads)

This dataset will be compiled from the proprietary Esri StreetMap Premium for ArcGIS. Dataset features that will be used are: Interstate Highways, Major Roads, and Surface Streets to capture paved and "crowned and ditched" roads. The surface street data have been demonstrated to include some "two-track" and 4-wheel-drive routes. The direct area of influence for roads will be represented by 240.2 feet, 84.0 feet, and 40.7 feet (73.2 meters, 25.6 meters, and 12.4 meters) total widths centered on the line feature for Interstate Highways, Major Roads, and Surface Streets, respectively (Knick et al. 2011).

Infrastructure (Railroads)

This dataset will be a compilation from the Federal Railroad Administration Rail Lines of the USA dataset. Non-abandoned rail lines will be used; abandoned rail lines will not be used. The direct are of influence for

railroads will be represented by a 30.8-foot (9.4-meter) total width (Knick et al. 2011) centered on the non-abandoned railroad line feature.

Infrastructure (Power Lines)

This line dataset will be derived from the proprietary Platts transmission lines database. Linear features in the dataset attributed as "buried" will be removed from the disturbance calculation. Only "In Service" lines will be used; "Proposed" lines will not be used. Direct area of influence will be determined by the kV designation: 1 to 199 kV (100 feet/30.5 meters), 200 to 399 kV (150 feet/45.7 meters), 400 to 699 kV (200 feet/61.0 meters), and 700+ kV (250 feet/76.2 meters) based on average right-of-way and structure widths, according to BLM WO-300 (Minerals and Realty Management).

Infrastructure (Communication Towers)

This point dataset will be compiled from the Federal Communications Commission communication towers point file; all duplicate points within the dataset will be removed. Points will be converted to a polygon dataset by using a direct area of influence of 2.5 acres (1.0 hectares) centered on each communication tower point (Knick et al. 2011).

Infrastructure (Other Vertical Structures)

This point dataset will be compiled from the FAA's Digital Obstacles point file. This dataset generally captures all tall structures over 200 meters, with additional structures below this threshold captured in areas surrounding airports which could pose an aviation risk. For additional information please visit the FAA DOF FAQs site. Points where attribution indicates the feature is a windmill will be removed. Duplicate points from the Federal Communications Commission communication towers point file will be removed. The remaining features will be converted to a polygon dataset using a direct area of influence of 2.5 acres (1.0 hectares) centered on each vertical structure point (Knick et al. 2011).

Other Developed Rights-Of-Way

Currently, no additional data sources for other developed rights-of-way have been identified. Roads, power lines, railroads, pipelines, and other known linear features are represented in the categories described above. If additional features representing human activities are identified representing developed rights-of ways outside of the themes described above, they will be added to the degradation analyses using similar assumptions to those used with the threats described above.

Disturbance Inventories

The BLM has partnered with the USGS and, over the past several years, has begun inventorying existing disturbances via "heads-up" digitization using aerial imagery within current Priority Habitat Management Areas (PHMAs). This inventory includes several disturbance types in addition to those used in the rangewide analyses as outlined in the 2015 LUP disturbance appendices:

Coalbed Methane and Other Energy-Related Retention Ponds

The footprint boundary will follow the fence line and includes the area within the fence line surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.

Meteorological Towers

This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.

Nuclear Energy Facilities
The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

Airport Facilities and Infrastructure (Public And Private)
The footprint boundary will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.

Military Range Facilities and Infrastructure
The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility's perimeter.

Hydroelectric Plants
The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

Recreation Areas and Facilities
This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Where this inventory is complete in GRSG habitat and if the digitization is within an acceptable timeframe (i.e. not deemed outdated), these disturbance data will also be used to evaluate the existing disturbance footprint and density of development.

Rangewide Habitat Degradation and Development Intensity Data Combination and Calculation Approaches
The threats targeted for measuring human activity (**Table 3-4**) and intensity of activities will be converted to direct area of influence polygons as described for each data source above. These threat polygon layers will be combined to create one overall polygon layer representing footprints of estimated active human activity in GRSG habitat. Individual datasets, however, will be preserved to indicate which types of threats may be contributing to overall habitat degradation. For intensity calculations, source data locations will be preserved with no additional removal beyond the methodology described above. Thus, overlapping inputs will be retained such that the density calculation reflects an overall intensity of development.

More complex disturbance and density estimation approaches may also be implemented, leveraging datasets described above, to facilitate a more complete picture of the level anthropogenic disturbance within GRSG habitat and potential impacts to GRSG habitats. For example, moving window analyses, which estimate development density within multiple spatial extents, can facilitate an understanding of potential direct and indirect effects of development on GRSG habitats (e.g., Decker et al. 2014 and Leinwand, I., N. B. Carr, and D. J. A. Wood 2016).

Measure 2a: What is the estimated amount of habitat degradation rangewide and the estimated change in the amount?
Within GRSG habitats, divide the combined estimated area of the active/direct footprint by the total area of GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents (percent disturbance in GRSG habitats).

Measure 2b: What is the estimated density of energy development activities and the change in the estimated density?
Within GRSG habitats, divide the total count of energy and mining locations (identified in **Table 3-4**) by the total area of GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents. The resulting density will be reported in units of "count per square mile".

Measure 2c: Were any disturbance or density caps above project scale exceeded?
Leveraging the outcomes of analyses performed to answer 2a and 2b, summaries of any disturbance or density caps, as articulated in each LUP, will be created.

Measure 2d: What is the amount of reclaimed energy-related degradation on BLM lands and the change in the amount?
Currently no single data repository exists which captures BLM's reclamation accomplishments in a spatial manner. As data becomes available depicting reclamation activities in sage-grouse habitats, they will be summarized.

Measure 3: GRSG Habitat Suitability

Measure 3.a. What is the status of GRSG habitat assessments at the mid-, fine- and site-scales across the range?
BLM will provide a rangewide summary of the total number of GRSG habitat assessments at the mid-, and fine-scales that are either completed or underway.

Measure 3.b. What is the suitability of GRSG habitats at mid- and fine- spatial scales?
BLM will summarize the results of the completed mid- and fine-scale assessments across the range of GRSG. Site-scale summaries are addressed in the LUP section of the BLM Revised GRSG Monitoring Framework.

Measure 4: Achievement of LHS in GRSG Habitat

Measure 4.a. How many acres were evaluated for achievement of the SSS/WL LHS in GRSG habitat across the range?
BLM will evaluate LHS on BLM-managed lands that contain GRSG habitat. Reporting will include the number of acres evaluated in the reporting period, evaluated prior to the reporting period, and not evaluated.

Measure 4.b. For areas that have been evaluated in GRSG habitat, what is the status of land health and what are the causes of non-achievement (as applicable)?
BLM will summarize the results of land health assessments (or functional equivalent) conducted within the reporting period as follows: achieving, making progress towards achieving, or not achieving LHS. Further, BLM will summarize the causes for not achieving land health when a causal factor analysis has been completed. As available, management responses will also be summarized.

Measure 5: BLM On-The-Ground Conservation and Restoration Efforts for GRSG

Measure 5.a. How many acres/miles were conserved or restored by treatment or action type in GRSG habitat?
BLM implements a variety of efforts to conserve and restore GRSG habitat. These efforts range from conifer removal and habitat restoration to riparian exclosures and fence modifications. BLM will use several existing databases to summarize the number of actions and number of acres/miles of conservation efforts by type.

Measure 6: GRSG Population Trend Rangewide

Measure 6.a. What is the rangewide average annual population trend?
The BLM will report rangewide population trends for GRSG. For rangewide populations trends, the BLM will report results from the most current version of the *Range-wide Population Trend Analysis for Greater Sage-*

Grouse (Centrocercus urophasianus) conducted by the USGS (e.g., Coates et al. 2022). This analysis estimates annual rangewide populations trends using these scales:

- Range-wide average annual trend
- Range-wide cumulative trend across three time periods:
  - Short (two oscillations, ~19 years)
  - Medium (four oscillations, ~35 years)
  - Long (six oscillations, ~55 years)

3.3 SECTION II: LUP IMPLEMENTATION MONITORING

3.3.1 Introduction

One key goal of monitoring BLM LUP implementation is to produce data and information to inform the GRSG portion of BLM LUP evaluations (as required by 43 CFR 1610.4-9 and the BLM H-1601-1 Land Use Planning Handbook). This section of the GRSG Revised Monitoring Framework describes the monitoring methodology for BLM to implement three types of monitoring and reporting across GRSG planning areas in 10 western states (California, Colorado, Idaho, Montana, North Dakota, Nevada, Oregon, South Dakota, Utah, and Wyoming):

- LUP implementation monitoring focuses on the primary cross-cutting GRSG conservation commitments (LUP objectives, decisions, and desired conditions) contained in the BLM 2025 GRSG LUP Amendments.
- Planning area GRSG habitat monitoring focuses on assessing suitability of habitat at the mid-, fine- and site scales. Planning area habitat monitoring also focuses on GRSG habitat availability to determine the status of BLM adaptive management habitat thresholds.

Planning area population monitoring focuses on GRSG population trends (tracked in partnership with state wildlife agencies and similar entities) to determine the status of BLM adaptive management population thresholds.

This Revised GRSG Monitoring Framework builds on the BLM's experience of annual monitoring and reporting on the first 5 years of GRSG BLM LUP implementation (2016 to 2020) published in the 5-year monitoring report (BLM Rangewide Monitoring Report, Herren et al. 2021). The structure for this section of the framework carries forward the monitoring questions from the Greater Sage-Grouse Monitoring Framework (Interagency Disturbance and Monitoring Subteam, May 2014) that have been modified to reflect the data, methods and information that has become available since 2015. Two additional monitoring questions have been added. The six monitoring questions are summarized in **Table 3-5**.

Table 3-5. The Six LUP Monitoring Measures, Associated Sub-Measures, Monitoring Questions and Data Sources for BLM Monitoring of GRSG Habitat Conditions and Population Trends

Measures	Monitoring Questions	Data
Measure 1: Status of GRSG habitat suitability within the planning area relative to the LUP objectives		
Measure 1a: Site-scale habitat suitability	What are the seasonal habitat suitability ratings as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised) and the combination of site-scale indicators?	State Office and National tracking of completed habitat assessments.

Measures	Monitoring Questions	Data
Measure 1b: Mid- and fine-scale habitat suitability	What are the mid- and fine-scale suitability ratings for GRSG habitats that overlap with the planning area as assessed by the mid- and fine-scale indicators?	State Office and National tracking of completed habitat assessments.
Measure 1c: Status of habitat assessments	What is the status of habitat assessments completed within the planning area?	State Office and National tracking of completed habitat assessments.
Measure 2: SSS/WL standard being achieved, or making progress towards being achieved, in allotments that contain GRSG habitats where evaluations have been completed since the 2024 Record of Decision within the planning area		
Measure 2a: Achieving, making progress towards achieving, or not achieving the SSS/WL standard	What is the number of allotments evaluated in the planning area and how many are achieving, making progress towards achieving, or not achieving the SSS/WL standard?	State Office and National tracking of completed land health evaluations.
Measure 2b: If grazing allotments include areas that are not achieving the standard and current grazing was identified as a significant causal factor	How many livestock grazing authorizations or allotments had management adjusted and what type of action was taken?	State Office tracking of grazing authorizations.
Measure 2c: If grazing allotments include areas that are not achieving the standard and current grazing was identified as a significant causal factor	How many permits/leases include an adaptive management strategy that incorporates specific thresholds and defined responses?	State Office tracking of grazing authorizations.
Measure 3: BLM LUP disturbance and density measures (e.g., surface disturbance caps)		
Measure 3a: Disturbance Caps	Were the disturbance caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the disturbance cap were authorized and why?	State office tracking of authorizations requiring a disturbance cap. Surface Disturbance and Reclamation Tracking Tool (SDARTT) or State managed disturbance databases.
Measure 3b: Density Caps	If applicable, were the density caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the density cap were authorized and why?	State office tracking of authorizations requiring a disturbance cap. SDARTT or State managed disturbance databases.
Measure 4: BLM LUP Adaptive Management habitat or population thresholds		
Measure 4a: Count of tripped thresholds	How many soft or hard BLM LUP adaptive management habitat or population thresholds were tripped in the planning area annually?	State office tracking of adaptive management thresholds.
Measure 4b: Count of untripped/reversed thresholds	How many thresholds were reversed ("untripped") annually in the planning area?	State office tracking of adaptive management thresholds.
Measure 4c: Responses to tripped thresholds taken by BLM	In areas where thresholds were tripped or untripped, what responses as described in the BLM LUP were taken initially? Were the response implementation actions modified after a causal factor analysis, if applicable?	State office tracking of responses to adaptive management thresholds being tripped or untripped.

Measures	Monitoring Questions	Data
Measure 4d: Status of causal factor analyses	What is the status of causal factor analyses? For completed causal factor analyses, what factors were identified as possible causal factors?	State office tracking of causal factor analysis in response to adaptive management thresholds being tripped.
Measure 5: Compensatory Mitigation		
Measure 5a: Use of compensatory mitigation	How many projects included compensatory mitigation annually? Which projects included compensatory mitigation?	State office tracking of compensatory mitigation.
Measure 6: Use of Waivers, Exceptions, or Modifications (WEMs)		
Measure 6a: Projects where WEMs are granted	Of the stipulations in the LUP developed for GRSG, which projects had a WEM granted? Of these projects, which type of stipulation and in which type of GRSG HMA were the WEMs granted?	State office tracking of WEMs associated with authorizations.

3.3.2 Methods

The following methods, datasets, and reporting units apply to implementation, habitat, and population monitoring across all BLM GRSG planning areas including variations that occur in some BLM GRSG planning areas due to partnerships with the states. Additional monitoring of GRSG conservation commitments may be implemented in BLM planning areas. The following descriptions of monitoring and reporting will be implemented to inform the six measures:

Measure 1: Status of GRSG habitat suitability within the planning area relative to the LUP objectives

Summaries of habitat suitability ratings, as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised), will be aggregated from National and State Office tracking mechanisms.

Measure 1a: What are the seasonal habitat suitability ratings as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised) and the combination of site-scale indicators?

The BLM will summarize the results of site-scale assessment reports that overlap with the planning area, reported in 5-year intervals. Example reporting could include proportional area estimates (e.g., 50 percent suitable, 20 percent marginal, 30 percent unsuitable) or plot counting (e.g., 50 plots suitable, 20 plots marginal, 30 plots unsuitable).

Measure 1b: What are the mid- and fine-scale suitability ratings for GRSG habitats that overlap with the planning area as assessed by the mid- and fine-scale indicators?

The BLM will summarize the results of mid- and fine-scale assessment reports that overlap the planning area.

Measure 1c: What is the status of habitat assessments completed within the planning area?

The BLM will summarize and report on the number of completed habitat assessments that overlap the planning area using the BLM National Operations Center tracking system.

Measure 2: SSS/WL standard being achieved, or making progress towards being achieved, in allotments that contain GRSG habitats where evaluations have been completed since the 2024 Record of Decision within the planning area.

Summaries of allotments achieving, making progress towards achieving, or not achieving the SSS/WL standard.

Measure 2a: What is the number of allotments evaluated in the planning area and how many are achieving, making progress towards achieving, or not achieving the SSS/WL standard?
The BLM will use the BLM's LHS database and State Office tracking mechanisms to monitor and report the achievement of the SSS/WL standard in completed land health evaluations in GRSG habitat within the planning area and whether livestock grazing was identified as a significant causal factor in non-achievement.

Measure 2b: For grazing allotments with areas not achieving SSS/WL standard and livestock grazing is a causal factor, how many livestock grazing authorizations or allotments had management adjusted and what type of action was taken?
The BLM will use available BLM databases and State Office tracking mechanisms to report on the number of livestock grazing authorizations or allotments that had management actions taken in each planning area. BLM Field, District, and State Offices will coordinate to report on the type of actions taken (e.g., changes to season of use or amount of use, changes to infrastructure).

Measure 2c: For grazing allotments with areas not achieving SSS/WL standard and livestock grazing is a causal factor, how many permits/leases include an adaptive management strategy that incorporates specific thresholds and defined responses??
BLM Field, District, and State Offices will coordinate to report on the number of permits/leases that were modified to incorporate an adaptive management strategy that includes specific thresholds and defined responses in each planning area.

Measure 3: BLM LUP disturbance and density measures (e.g. surface disturbance and density caps)
The BLM field offices will use disturbance tracking databases (e.g., SDARTT) or other methods to track the amount of disturbance authorized by the BLM. The BLM State Offices/BLM National Operations Center will compile the results and summaries of habitat disturbance calculations conducted at the project and larger scale management areas within the planning area to include in monitoring reports.

Measure 3a: Were the disturbance caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the disturbance cap were authorized and why?
For projects that exceeded the disturbance cap, the BLM State Offices will identify those projects, and the reason(s) why the disturbance cap was exceeded using available databases and project records (e.g., National Environmental Policy Act of 1969 [NEPA] documents).

Measure 3b: If applicable, were the density caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the density cap were authorized and why?
If the LUP includes a cap on the density of anthropogenic disturbances, the BLM SOs will identify the projects that were authorized which exceeded the density cap and provide the reason for the exceedance using available databases and project records (e.g., NEPA documents).

Measure 4: BLM LUP Adaptive Management habitat or population thresholds
BLM State Offices will complete adaptive management threshold and causal factor (as required) analyses annually as described in each LUP.

Measure 4a: How many soft or hard BLM LUP adaptive management habitat or population thresholds were tripped in the planning area annually?
BLM State Offices, in coordination with BLM Field and District Offices, will report on annual calculations and counts of LUP adaptive management thresholds tripped.

Measure 4b: How many thresholds were reversed ("untripped") annually in the planning area?
BLM State Offices, in coordination with BLM Field and District Offices, will report on annual calculations and counts of LUP adaptive management thresholds untripped.

Measure 4c: In areas where thresholds were tripped or untripped, what responses as described in the BLM LUP were taken initially? Were the response implementation actions modified after a causal factor analysis, if applicable?
The BLM State Office, in coordination with BLM Field and District Offices, will summarize and report on the action(s) taken, as described in the LUP, in response to each threshold being tripped or reversed.

Measure 4c: What is the status of GRSG causal factor analyses? For completed causal factor analyses, what factors were identified as possible causal factors?
The BLM State Office, in coordination with BLM Field and District Offices, will summarize the number and status of causal factor analyses required in response to adaptive management thresholds being tripped or untripped as required in the LUP. For completed causal factor analyses, the BLM State Office, in coordination with BLM Field and District Offices, will also report on the identified causal factors (if known) and the responses or implementation actions taken to address the causal factors if different than those taken in response to a threshold being tripped or untripped (as applicable).

Measure 5: Compensatory Mitigation
BLM State Offices will track the implementation of the use of compensatory mitigation for individual authorizations.

Measure 5a: How many projects included compensatory mitigation annually? Which projects included compensatory mitigation?
The BLM State Office, in coordination with BLM Field and District Offices, will report on the number of authorized projects that included compensatory mitigation and report on which projects included compensatory mitigation.

Measure 6: Use of WEMs
BLM State Offices will track the use of WEMs in GRSG habitat.

Measure 6a: Of the stipulations in the LUP developed for GRSG, which projects had a WEM granted? Of these projects, which type of stipulation and in which type of GRSG HMA were the WEMs granted?
The BLM State Office, in coordination with BLM Field and District Offices, will report on which projects had a WEM granted for the stipulations in the LUP developed for GRSG. Of these projects, the type of stipulation and in which type of GRSG HMA the WEMs were granted will also be reported.

Table 3-6. Example Reporting Structure for WEMs

WEMs granted by BLM by stipulation type and GRSG Habitat Management Type			
Project NEPA ID	**Stipulation Type (No Surface Occupancy, Controlled Surface Use, Timing Limitation)**	**WEM Type (Waiver, Exception, Modification)**	**Habitat Type (PHMA, Important HMA, General HMA)**
Example: NEPA number	Timing Limitation	Exception	PHMA

3.4 SECTION III: EVALUATION OF EFFECTIVENESS

The information collected at the rangewide scale will be used by the BLM to provide a cohesive look at conditions across administrative boundaries. Measures which are analyzed across all lands (vegetation availability and condition, disturbance estimates, etc.) will be also analyzed on BLM managed lands so that BLM management influence on each can be inferred. Similarly, trend analyses and monitoring of changes through time for several measures will facilitate an understanding of BLM's influence on sage-grouse habitats. Conceptually, if rangewide monitoring identifies increasing sagebrush availability and improving vegetation conditions, decreasing disturbance, and a stable or increasing, there is evidence that the BLM's goal to conserve and maintain habitats for healthy populations and connectivity of populations have been met. Conversely, where information indicates that sagebrush is decreasing and vegetation conditions are degrading, disturbance in sage-grouse areas is increasing, and/or populations are declining relative to the baseline, there is evidence that the BLM's goal is not being achieved. Given the variety of measures this Framework outlines, the inherent challenges of establishing cause-and-effect relationships in mixed ownership landscapes and the complexity of population dynamics, such straight forward interpretations are expected to be minimal. To the best of the BLM's ability, factors driving observed changes will be identified and discussed when each measure is examined and synthesized with BLM's role in observed change identified (i.e. were changes due to drought or directly related to BLM's management).

The information collected under the six LUP questions of this monitoring framework will be leveraged in the broader LUP effectiveness evaluation required in 43 CFR 1610.4-9 and as described in the BLM Land Use Planning Handbook (BLM H-1601-1, 2005). BLM State Offices will include sage-grouse specific sections in these evaluations of effectiveness for areas where sage-grouse management goals and objectives are applicable. The complexity of these evaluations may be based on the amount of sage-grouse habitats within the area, known issues within sage-grouse habitats or other factors deemed important by the State Office. The sage-grouse specific components of these evaluations will include, at a minimum, the information collected to inform the six LUP measures. Additional local information that supports or clarifies the conclusions or effectiveness summaries shall also be considered. Information from the range wide effectiveness section of this monitoring framework will be used to inform the effectiveness evaluation at the LUP level as applicable. This information will also be used to place the field office's effectiveness evaluation conclusions in context with how the implementation of sage-grouse management decisions are supporting the overall BLM's goals to conserve and manage GRSG habitats to support persistent, healthy populations, consistent with BLM's sensitive species policy and in cooperation with other conservation partners and maintain existing connectivity between sage-grouse populations. The interdisciplinary team will develop and recommend a suite of actions, as appropriate, the BLM can take to address any conclusions made within the sage-grouse portion of the larger effectiveness evaluation. These recommendations may vary from LUP implementation changes to LUP revisions as described in the Land Use Planning Handbook, section VI.

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APPENDIX A. LANDFIRE ECOLOGICAL SYSTEMS CAPABLE OF SUPPORTING SAGEBRUSH

Table A1. Ecological systems in BpS and EVT capable of supporting sagebrush vegetation and capable of providing suitable seasonal habitat for GRSG.

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability of Producing	Sagebrush (SB) or Sagebrush Associated (SBA)
Colorado Plateau Mixed Low Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longiloba* *Artemisia bigelovii* *Artemisia nova* *Artemisia frigida* *Artemisia tridentata* ssp. *wyomingensis*	SB
Columbia Plateau Low Sagebrush Steppe	*Artemisia arbuscula* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova*	SB
Columbia Plateau Scabland Shrubland	*Artemisia rigida*	SBA
Columbia Plateau Steppe and Grassland	*Artemisia* spp.	SBA
Great Basin Xeric Mixed Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longicaulis* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis*	SB
Inter-Mountain Basins Big Sagebrush Shrubland	*Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis*	SB
Inter-Mountain Basins Big Sagebrush Steppe	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *tripartita* *Artemisia frigida*	SB
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Woodland	*Artemisia tridentata* ssp. *vaseyana* *Artemisia arbuscula* *Artemisia tridentata*	SBA
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Shrubland	*Artemisia tridentata* ssp. *vaseyana* *Artemisia arbuscula* *Artemisia tridentata*	SBA
Inter-Mountain Basins Mixed Salt Desert Scrub	*Artemisia tridentata* ssp. *wyomingensis* *Artemisia spinescens*	SBA
Inter-Mountain Basins Montane Sagebrush Steppe	*Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia nova* *Artemisia arbuscula* *Artemisia tridentata* ssp. *spiciformis*	SB
Inter-Mountain Basins Semi-Desert Shrub-Steppe	*Artemisia tridentata* *Artemisia bigelovii* *Artemisia tridentata* ssp. *wyomingensis*	SBA
Northwestern Great Plains Mixed Grass Prairie	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *vaseyana* *Artemisia frigida*	SBA

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability of Producing	Sagebrush (SB) or Sagebrush Associated (SBA)
Northwestern Great Plains Shrubland	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *wyomingensis*	SBA
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	*Artemisia tridentata*	SBA
Rocky Mountain Lower Montane-Foothill Shrubland	*Artemisia nova* *Artemisia tridentata* *Artemisia frigida*	SBA
Western Great Plains Sand Prairie	*Artemisia cana* ssp. *cana*	SBA
Wyoming Basins Dwarf Sagebrush Shrubland and Steppe	*Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *rupicola*	SB
Artemisia tridentata ssp. *vaseyana* Shrubland Alliance (EVT only)	*Artemisia tridentata* ssp. *vaseyana*	SB
Quercus gambelii Shrubland Alliance (EVT only)	*Artemisia tridentata*	SB

APPENDIX B. DATA ACCURACY ASSESSMENTS FOR LANDFIRE AND RCMAP

LANDFIRE Agreement Assessment

In the monitoring framework we will use the most recent version of LANDFIRE EVT data (EVT 2.2.0) which currently is based on the 2016 EVT Remap with updates due to disturbances. The 2016 EVT Remap data were reviewed using agreement assessments that compared individual sample field plots with EVT classes for pixels at plot locations using the Auto-Key EVT assignment. The plot data used for the agreement assessment was not used in the 2016 remap process by LANDFIRE so this was formulated as the most independent and robust test possible for the data. More details of this process are here: https://landfire.gov/remapevt_assessment.php.

Agreement assessments of all classes of data in northwest (NW) and southwest (SW) GeoAreas provide overall results of 47 percent and 42 percent respectively (**Table B1**). However, for GRSG purposes we also aggregated all classes into sagebrush (SB), sagebrush associated (SBA), or nonhabitat using LANDFIRE's process of collapsing categories. This aggregation caused the agreement assessments to increase substantially for both the NW and SW GeoAreas (**Table B1**).

Table B1. Agreement assessments of sagebrush (SB), sagebrush associated (SBA), nonhabitat, and overall classes in LANDFIRE EVT data showing the increased accuracy estimated when classes are grouped.

GeoAreas	SB	SBA	SB and SBA	Nonhabitat	Overall
NW	85%	49%	86%	92%	47%
SW	75%	45%	71%	92%	42%

RCMAP Accuracy Assessment

Rigge et al. (2022) accuracy metrics, using 1860 independent field measurements, are shown in the table under Published. The BLM-conducted accuracy assessment used more than 3,000 data points from the AIM

2.0 database in 2021 and compared them to RCMAP 2020 predictions that used training data to 2019 (Savage and Slyder 2022).

Table B2. Results of RCMAP published and BLM-conducted accuracy assessments (Savage and Slyder 2022).

Indicator	Published			BLM-conducted		
	R2[1]	RMSE[2]	MAE[3]	R2[1]	RMSE[2]	MAE[3]
Annual Herbaceous	0.58	9.8	-	0.13	14.21	7.59
Sagebrush	0.4	7.5	-	0.33	8.41	5.51
Trees	-	-	-	-	-	-

[1] R2 is the coefficient of determination
[2] RMSE is the root mean squared error
[3] MAE is the mean absolute error

APPENDIX C. LITERATURE SUMMARY OF CONIFER EFFECTS ON SAGE-GROUSE

Table C1. Summary of the literature on the effects of conifer cover on GRSG.

Name	% Conifer Cover	Distance/ Area	State	Leks	Nesting	Brood Rearing	No Season Given
Baruch-Mordo et al. 2013	>4%	-	OR	No active leks	-	-	-
Baxter et al. 2017	-	-	UT	-	-	Selected areas far from trees	-
Beers et al. 2022	<2%, <11%, <4%	400m, 800m	NV UT	Summer and breeding Winter Year-round, selected for sagebrush patch contiguity			
Brussee et al. 2022	0%	-	NV	-	-	Preferred no pinyon-juniper to 1-10% conifer	-
Casazza et al. 2011	<5% (threshold was selected by the scientists based on Miller et al 2005)	7.9 ha (20 acre, 160m radius); 226.8 ha (560 acre, 850m radius)	CA	-	-	GRSG avoided pinyon-juniper at large scale, but models were unsuccessful at explaining this	-
Coates et al. 2017	< 2%	-	CA	-	-	-	GRSG tolerate <2% but less may be better for survival
Cook et al. 2017	4% >3 %	1000m 800m	UT	Lower suitability	Lower suitability	-	-

Name	% Conifer Cover	Distance/ Area	State	Leks	Nesting	Brood Rearing	No Season Given
Doherty et al. 2010	-	100m	MT, WY	-	Strong avoidance of conifer within	-	-
Doherty et al. 2016	-	-	MZs	Strong neg relationship between GRSG occurrence and tree canopy cover			
Doherty et al. 2021	>3%	560m	OR	Lower suitability	-	-	-
Fedy et al. 2014	-	-	WY	GRSG avoided forested areas			
Gibson et al. 2015	>30%, 10-30%	1000m	NV	-	Avoided 10-30% areas were selected	-	-
Nisbet et al. 1983	0%	-	NV UT	Lek model preference for sites with no conifer	-	-	-
Olsen et al. 2021	-	-	OR	GRSG population increased where conifer was removed, suggest limit to <10% cover			
Picardi et al. 2020	-	-	UT	Modeled relationship found that areas with no conifer cover would be selected and areas with high conifer cover would be avoided			
Roth et al. 2022	-	-	NV	-	GRSG selected pinyon-juniper class (1-10%) was below average	-	-
Sandford et al. 2017	>4%	-	UT	-	Less suitable for nesting habitat	-	-
Severson et al. 2017	>3%, >4%	800m	OR	-	Lower suitability, Marginal/unsuitable	-	-
Westover et al. 2016	-	-	UT	GRSG avoided areas with high percentage of trees GRSG broods found further from trees			

Appendix 4

Greater Sage-Grouse Habitat Indicators and Benchmarks

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Appendix 4. Greater Sage-Grouse Habitat Indicators and Benchmarks

Incorporating the Best Available Science into the Habitat Assessment Framework Process

The Habitat Assessment Framework (HAF/ BLM TR 6710-1, as revised) provides a standardized, scientifically based methodology to assess sage-grouse habitat suitability at multiple scales (broad, mid, fine, and site-scales, Levels 1, 2, 3 and 4 respectively). Habitat suitability occurs along a gradient ranging from unsuitable to suitable and is rarely uniform within and across the scales. Using multi-scale evaluations is important for assessing GRSG habitat by considering the entire suite of conditions that contribute to high quality habitat, the success of past conservation actions, and prioritizing future land uses and conservation actions. Descriptions of the scales of habitat selection (broad-, mid-, fine-, and site-) and the associated indicators for habitat assessment at each scale are available in the HAF (BLM TR 6710-1, as revised).

Habitat Indicators and Benchmarks for Site-Scale HAF

The vegetation characteristics associated with site-scale habitat suitability vary across the range of GRSG. For example, characteristics (both indicators and benchmarks) in the grasslands of Montana are different than the characteristics in the sagebrush shrublands in the southern Great Basin of Utah and Nevada. The HAF technical reference includes general site-scale forms for the indicators and benchmark values for suitable site scale habitat ratings. The indicators and benchmark values used in these forms at the site scale should be updated to incorporate the best available research related to habitat suitability applicable to the regional and local variability. For example, publications are anticipated within a year as a result of the 10-year Grouse-Grazing Study which released a Final Report in June 2025 (Conway et al. 2025). Hence, updates to indicators and benchmark values may occur, as appropriate, on seasonal dates for lekking, nesting, and late brood-rearing, and habitat characteristics for sagebrush cover, perennial grass and perennial forb height and cover, pending future scientific publications.

The Habitat Indicators Table (**Table 4-1**) provide a list of indicators and benchmarks, derived from local and regional research on GRSG habitat selection, that collectively are used to inform habitat suitability. These indicators and benchmarks have been updated from those in the HAF based on more recent and localized research. BLM Idaho will use the indicators and benchmarks in **the table below** to assess each monitoring location within seasonal habitats for site-scale suitability, with data collected during the appropriate corresponding seasonal use period, as applicable to address phenological changes. Not all areas within a given habitat management area will be capable of meeting the identified seasonal habitat values in the Habitat Indicators Table due to inherent variation in vegetation communities and ecological potential. Habitat Indicators and Benchmarks are habitat conditions that are based on habitat selection that may not be achievable or applicable in all areas. Site-specific benchmarks must be based on the site's ecological potential informed by ecological site descriptions and associated state-and-transition models and the site's current ecological state.

When completing site-scale assessments, **it is *inappropriate* to use a single indicator** from **Table 4-1** or the HAF habitat suitability form to determine overall habitat suitability of the plot (i.e., suitable, marginal, or unsuitable) unless sagebrush is absent or limiting. Instead, BLM staff must consider all the indicators using multiple lines of evidence, as described in the HAF and in the training materials, to determine the plot's

overall habitat suitability. The measured habitat indicator values will vary seasonally, driven largely by use and environmental conditions (e.g., ecological site potential of the monitoring plot), including factors such as annual rainfall, drought, annual production, and natural disturbances, such as high intensity wildfires and flooding. In addition, a site may not meet the suitable rating if many indicators are impacted by annual climate variability (e.g., drought conditions), which is independent of management. Thus, it is critical to document environmental factors when completing the habitat suitability forms. This information is essential to inform land health assessments and evaluations. Factors to inform assessments and evaluations could also include grouping portions of the landscape based on ecological characteristics that influence their impact to and recovery from changes on the landscape (e.g., fire, drought and other extreme weather events, insect outbreaks, soil disturbance, etc.). Use of such disturbance response groupings (considering disturbance in the ecological sense, not based on the RMP disturbance cap) may also be appropriate to scale ecological site descriptions for larger planning areas and provide context to HAF assessments (Stringham et al. 2016).

Indicators are assessed following the methods described in the Sage-grouse Habitat Assessment Framework. BLM will leverage the terrestrial Assessment, Inventory, & Monitoring (AIM) methods (Herrick et al. 2021), additional monitoring approaches for wetland & riparian habitats, credible partner data, and supplemental long-term monitoring data and guidelines developed by the BLM to collect data on site-scale habitat condition (**Table 4-1**). Not all monitoring locations within a given seasonal habitat area will be able to achieve all suitable benchmark values in the Habitat Indicators Table due to the inherent variation in vegetation communities and ecological site potential. The intent is not to meet all habitat requirements at all monitoring locations, but to provide seasonal habitat requirements sufficiently across the landscape. Marginal or unsuitable ratings may still provide, or have the capacity to provide, one or more of the habitat components.

As additional research becomes available, new data could continue to refine or clarify GRSG selection for vegetation structure and composition in seasonal habitats for certain populations, e.g. multi-year studies from NV and CA (Coates et al. 2017a, Brussee et al. 2023) and Idaho (Conway et al. 2025). Because of this, the Habitat Indicators Table was updated for this effort and will be periodically reviewed to incorporate the best available science in coordination with applicable federal, state, local, and tribal agencies. The values provided in Table 4-1, as updated, will be used for HAF assessments. The addition or adjustment to indicators or benchmarks in the Habitat Indicators Table must include the reference or basis for which the changes are made. Edits should only be made if warranted by scientific evidence, in coordination with the applicable state agency.

Table 4-1. Idaho GRSG Seasonal Habitat Indicators and Benchmarks*

Attribute	Indicator	Benchmarks	Reference
LEK HABITAT (Seasonal Use Period March 1 – May 15) [1]			
Lek Security	Proximity of trees	Trees (i.e., mainly juniper, conifers, and does not include old- growth juniper, pinyon pine and mountain mahogany) absent or uncommon on shrub/grassland ecological sites within 1.86 miles (3 km) of occupied leks.	Baruch-Mordo et al. 2013 Stiver et al. 2015
	Proximity of sagebrush to leks	Adjacent protective sagebrush cover within 328 ft. (100 m) of an occupied lek	Stiver et al. 2015

* Indicators in **Table 4-1** will be used in the HAF process to supplement the equivalent site-scale suitability indicators (i.e. Tables 4 through 7 in Stiver et al. 2015).

Attribute	Indicator	Benchmarks	Reference
NESTING/EARLY BROOD REARING [1,5] (Seasonal Use Period May 1 – June 30) [1]			
Cover and Food	Sagebrush cover [2]	15-25%	Connelly et al. 2000 Connelly et al. 2003 Hagen et al. 2007 Stevens et al. 2023
	Sagebrush height Arid sites [3] Mesic sites [4]	 12-31 inches (30-80cm) 16-31 inches (40-80cm)	Connelly et al. 2000
	Predominant sagebrush shape	Predominantly spreading shape [5]	Stiver et al. 2015
	Perennial grass cover (such as native bunchgrasses) [2] Arid sites [3] Mesic sites [4]	 ≥10% ≥15%	Connelly et al. 2000 Stiver et al. 2015 Smith et al. 2018, 2020 Dahlgren et al. 2019 Conway et al. 2025
	Perennial grass (and forb) height (includes residual grasses)	Suitable nesting cover[6]	Connelly et al. 2000 Stiver et al. 2015 Coates et al. 2017a Smith et al. 2018, 2020 Dahlgren et al. 2019 Conway et al. 2025
	Perennial forb cover [2] Arid sites [3] Mesic sites [4]	 ≥5% ≥10%	Connelly et al. 2000
	Perennial forb availability	Preferred forbs are common with several species present [7]	Stiver et al. 2015
	Invasive annual grass cover	<2% cover	BLM synthesis of research [10]
	Conifer	0 (Absence of conifer)	BLM synthesis of research [11]
LATE BROOD-REARING/SUMMER[1, 8] (July-October)[1] Late brood-rearing areas, such as riparian, meadows, springs, higher elevation mesic uplands, etc. may occur within other mapped seasonal habitat areas. Apply late brood rearing/summer habitat desired conditions locally as appropriate.			
Cover and Food	Sagebrush cover [2]	Uplands 10-25% Riparian/Meadow: Sagebrush cover within 100 m	Connelly et al. 2000
	Sagebrush height	16 to 32 inches (40-80cm)	Connelly et al. 2000
	Perennial grass and forb cover [2]	>15%	
	Upland and riparian perennial forb availability [2]	Preferred forbs are common with appropriate numbers of species present [7]	Stiver et al. 2015
	Riparian and/or meadow habitat condition	Proper Functioning Condition	Stiver et al. 2015
	Invasive annual grass cover	<2% cover	BLM synthesis of research [10]
	Conifer	0 (Absence of conifer)	BLM synthesis of research [11]
WINTER[1] November-March[1] (Apply to areas of known or likely winter-use)			
Cover and Food	Sagebrush cover and height above snow.	Sagebrush is at least 10 inches (25 cm) above snow and ≥10% cover [9]	Connelly et al. 2000 Stiver et al. 2015
	Conifer	0 (Absence of conifer)	BLM synthesis of research [11]

Notes:

[1] Seasonal dates can be adjusted by local unit according to geographic region.

[2] Since plant species and/or life forms may overlap, total vegetative cover, inclusive of shrubs, forbs and grasses may exceed 100%. Note that sagebrush cover objectives may exceed 25% in some areas, for example in areas with higher precipitation, and/or where local science is available demonstrating sage-grouse use of areas with sagebrush cover > 25%.

[3] Arid corresponds to the 10 – 12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub- species for this type site (Stiver et al. 2015).

[4] Mesic corresponds to the ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (Stiver et al. 2015).

[5] Collectively the indicators for sagebrush (cover, height, and shape), perennial grass and perennial forb (cover, height and/or availability) represent the desired condition range for nesting/early brood rearing habitat characteristics, consistent with the breeding habitat suitability matrix identified in Stiver et al. *2015*. Sagebrush plants that are more tree or columnar-shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush), and a natural part of the plant community. However, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site specific scales.

[6] Perennial grass and forb height (including residual grasses) that would provide for adequate nesting cover will be based on the best available science; these may differ by ecological site potential and vegetation type, e.g. perennial grass, forb, and/or residual grass height (Coates et al. 2017a, Dahlgren et al. 2019).
[7] Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred.
[8] Some late brood habitat occurs at higher elevations outside of mapped nesting habitat and some is embedded within nesting landscapes especially areas such as wet meadows, riparian areas, springs and seeps.
[9] Winter habitat metrics are a guideline but snow depths and habitat availability may vary widely depending on winter severity, topography and elevation.
[10] BLM synthesis of research on the impacts invasive annual grasses have on sage-grouse habitat suitability (**Attachment 4-1**)
[11] BLM synthesis of research on the impact conifer have on sage-grouse habitat suitability (**Attachment 4-2**)

USING THE HABITAT INDICATORS TABLE

The Habitat Indicators Table is to be used as follows:

- To inform habitat suitability at one point in time, as defined by the processes described in the Habitat Assessment Framework and BLM HAF Implementation Guidelines.
- To inform measurable project objectives during implementation-level planning for BLM-permitted and BLM-initiated actions in HMAs, as applicable.
- To inform agency decision-makers regarding consideration of whether a project or proposal should be approved, denied, or modified based on how it would affect an area's existing habitat suitability status.

Additional guidance on the use of the Habitat Indicators Table and the associated products is available in the Habitat Assessment Framework (Stiver et al. 2015, BLM TR 6710-1, as revised) and BLM Sage-grouse HAF Implementation Guidelines.

When assessing seasonal habitat suitability, the BLM will summarize and report the number of monitoring locations, or amount of seasonal habitat in the analysis area, that are suitable, marginal, or unsuitable. Based on the monitoring locations rated as suitable, marginal, or unsuitable and the documentation of conditions across the entire analysis area such as ecological site potential (using appropriate ecological site descriptions, State and Transition Models, reference sheets, etc.), weather, and land ownership patterns, the BLM will determine if a given seasonal habitat is a limiting factor for sage-grouse. All rationale will be documented in a HAF summary report.

Relationship of the Habitat Indicators Table to other assessment and planning tools

The indicators and benchmarks in the Habitat Indicators Table are meant to inform the wildlife and/or sensitive species component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2; **Figure 4-1**). The Habitat Indicators are not land health standards and do not replace land health assessments. The indicators relating to vegetative cover are assessed using AIM methodology (Herrick et al. 2021). The HAF, GRSG Monitoring Framework (see **Appendix 3**), and land health assessments all incorporate AIM data to monitor existing conditions and track changes over time. The Land Use Plan (LUP) indicators use AIM methods to measure several of the GRSG habitat indicators.

Table 4-2. Relationships of LUP, HAF, LHS and MF to the GRSG Habitat Objectives

Land Health Standards (LHS) Evaluation	Land Use Plan (LUP)	GRSG Habitat Assessment Framework (HAF)	GRSG Monitoring Framework (MF)
Evaluates if the sage-grouse portion of the Special Status Species Land Health Standard is achieved or significant progress towards achievement is made. These evaluations utilize HAF results along with other data.	Sets GRSG habitat objective(s) and Identifies the GRSG habitat indicators (see **Table 4-1** above) and benchmarks from best available science for evaluating progress toward meeting the objective	Provides methods to assess GRSG habitats using the LUP indicators and benchmarks from this appendix (see **Table 4-1** above)	Provides framework for reporting progress toward achieving the objective(s) of the LUP

INAPPROPRIATE USES OF THE HABITAT INDICATORS TABLE

- Using the indicator value(s) as default desired conditions to inform LUP effectiveness without considering the current state compared to ecological potential of the site and relevant local information where measurements were taken.
- Using a single measured indicator value such as grass height to determine sage-grouse habitat suitability.
- Using a single indicator as a criterion to modify grazing management or any other use.
- Adjusting use authorizations based on measured indicator values without adequate monitoring data.
- Adjusting use authorizations before determining whether the change will help move towards suitable habitat.

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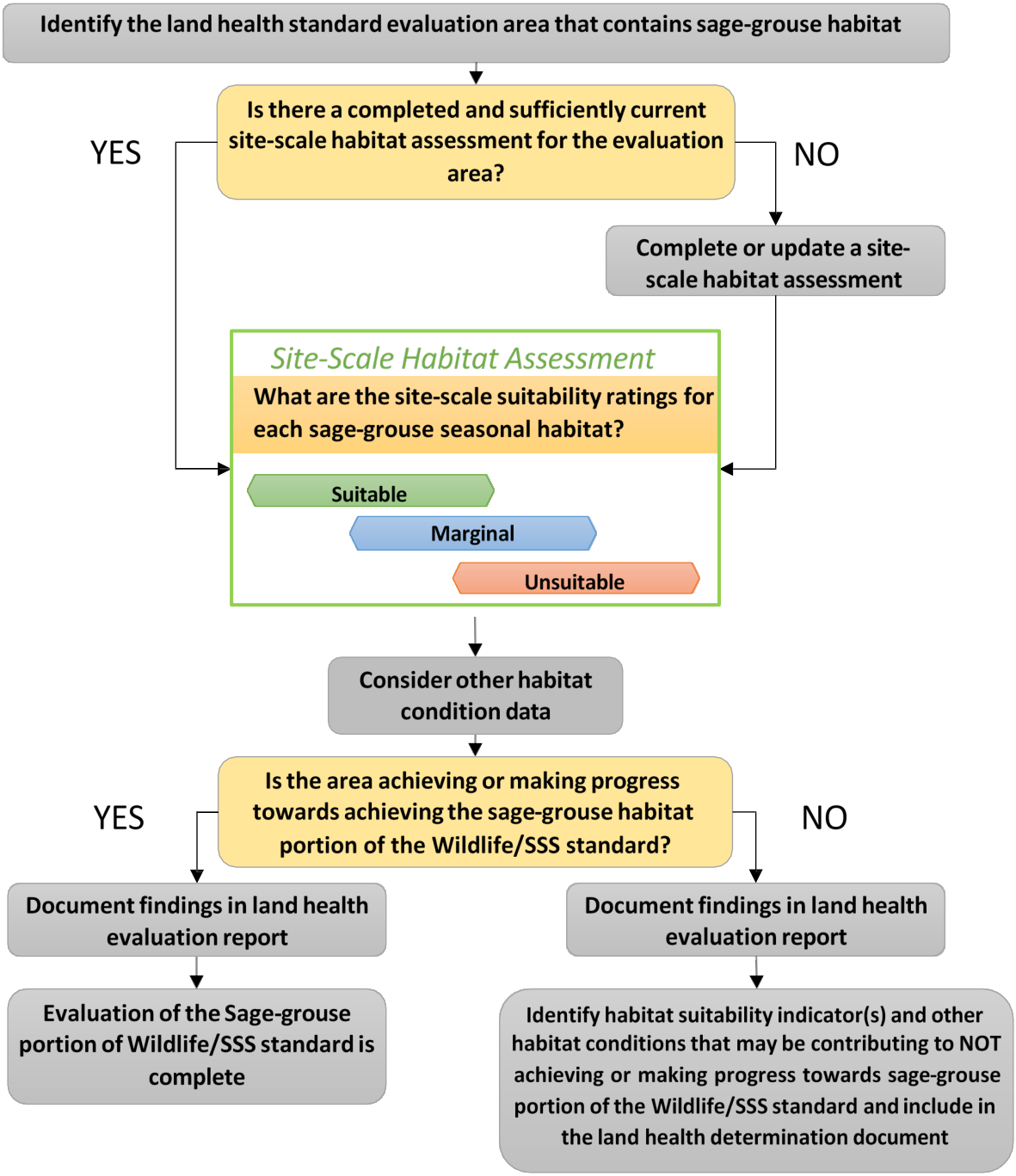
Figure 4-1. Flowchart on Incorporating the Results of Site-Scale Sage-Grouse Habitat Assessment* into Wildlife/SSS Standard in the Land Health Assessments and Evaluations**


Identify the land health standard evaluation area that contains sage-grouse habitat
Is there a completed and sufficiently current site-scale habitat assessment for the evaluation area?
YES
NO
Complete or update a site-scale habitat assessment
Site-Scale Habitat Assessment
What are the site-scale suitability ratings for each sage-grouse seasonal habitat?
Suitable
Marginal
Unsuitable
Consider other habitat condition data
Is the area achieving or making progress towards achieving the sage-grouse habitat portion of the Wildlife/SSS standard?
YES
NO
Document findings in land health evaluation report
Document findings in land health evaluation report
Evaluation of the Sage-grouse portion of Wildlife/SSS standard is complete
Identify habitat suitability indicator(s) and other habitat conditions that may be contributing to NOT achieving or making progress towards sage-grouse portion of the Wildlife/SSS standard and include in the land health determination document

Acronyms:

SSS – Special Status Species
* Following the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015)

**For the complete land health standards evaluation and causal factor determination workflow, refer to: Kachergis, E., N. Lepak, M. Karl, S. Miller, and Z. Davidson. 2020. Guide to Using AIM and LMF Data in Land Health Evaluations and Authorizations of Permitted Uses. Tech Note 453. U.S. Department of the Interior, Bureau of Land Management, National Operations Center, Denver, CO.

Attachment 4-1. Justification for Invasive Annual Grass as a Habitat Suitability Indicator at the Sage-grouse Habitat Assessment Framework (HAF) Site-Scale

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Finalized on: October 12, 2023

BACKGROUND

Invasive annual grasses, such as cheatgrass, medusahead, and ventenata species, are a recognized threat to sagebrush ecosystems (Chambers et al. 2016, Remington et al. 2021, Rowland et al. 2019) causing reduced ecosystem function, displacement of native vegetation, increased fire risk and reduced rates of post-fire recovery (D'Antonio and Vitousek 1992, Bradely et al. 2018) all of which can lead to degradation and/or loss of sage-grouse habitat (Nelle et al. 2000, Wik et al. 2002, Coates et al. 2015, Coates et al. 2016, Lockyer et al. 2015, Steenvoorden et al 2019, Brussee et al. 2022, Poessel et al. 2022). The Bureau of Land Management (BLM) uses the Sage-grouse Habitat Assessment Framework (HAF; Stiver et al. 2015) to assess sage-grouse habitat suitability at multiple spatial scales (mid-, fine- and site-scale) by examining scale-specific indicators that represent both habitat requirements (i.e., food, water, cover, security) and threats to habitat (i.e., anthropogenic disturbances, proximity of trees to leks). However, invasive annual grasses are not included as an indicator of habitat suitability at any scale of the HAF (Stiver et al. 2015). This omission has been recognized by both authors and implementors of the HAF as a shortcoming that should be remedied, as supported by scientific literature.

The purpose of this document is to:

- Provide scientifically based rationale for including invasive annual grass cover as an additional indicator in HAF site-scale habitat assessments (Stiver et al. 2015, revised), and
- Recommend scale-specific benchmarks for invasive annual grass cover for HAF site-scale assessments based on scientific literature relevant to that scale.

RATIONALE

Research has shown that invasive annual grasses can reduce habitat suitability for sage-grouse, at the site-scale (i.e., microhabitat), by displacing native vegetation and altering habitat composition and structure (Chambers et al. 2016, Coates et al. 2017, Brussee et al. 2022). This degradation can cause sage-grouse to avoid areas with invasive annual grasses (Lockyer et al. 2015, Coates et al. 2017, Poessel et al. 2022) and can cause lower occupancy and survival rates in areas with invasive annual grasses (Wik et al 2002, Kirol et al. 2012, Lockyer et al. 2015). General speaking, studies have shown that greater sage-grouse will use areas with relatively low amounts of invasive annual grasses for nesting and brood-rearing; however, in areas with relatively higher amounts of invasive annual grasses, rates of occupancy and/or survival are lower (Coates et al. 2017, Dinkins et al. 2016, Lockyer et al. 2015, Schreiber et al. 2015, Stonehouse et al. 2015, Wik 2002).

For example, a study conducted in Nevada and California found that cheatgrass abundance was the single greatest micro-habitat feature distinguishing greater sage-grouse nest sites from random sites in the study area and that average cheatgrass cover at nest sites (7.1%; SE=1.0) was lower than at random sites (13.3%; SE=1.2) (Lockyer et al. 2015). A study in Idaho found that successful nests had lower average cheatgrass cover (1%) than unsuccessful nests (4%) while successful broods had lower average cheatgrass cover (2%) than unsuccessful broods (6%) (Wik et al. 2002). In Nevada and California, a study indicated that > 5% annual grass cover was unsuitable for GRSG during nesting and brood-rearing (Coates et al. 2017). They also recommended suitability categories for invasive annual grasses in nesting habitat specific to xeric sites (<2.5% invasive annual grass cover is suitable, 2.5 – 4.8% is marginal, >4.8% is unsuitable) and mesic sites (<2.5% invasive annual grass cover is suitable, 2.5 – 5.2% is marginal, >5.2% is unsuitable).

Although individual studies reported different values of invasive annual grass cover associated with sage-grouse site selection and nest/brood success, there was notable overlap. In studies that examined site selection (not success), they reported mean values ranging between <1% to 17% cover of invasive annual grasses at used sites (regardless of success), with most reporting <7% cover (**Table 1**). In studies that examined nest and/or brood success relative to invasive annual grasses, they reported mean values between 1% to 7% for successful sites (Wik et al. 2002, Lockyer et al. 2015) (**Table 1**). Of note, some studies have shown that sage-grouse exhibit maladaptive site selection to invasive annual grasses and other habitat indicators due to nest site fidelity (Coates et al. 2017, Brussee et al. 2022, Cutting et al. 2019) so nest/brood success may be a more accurate indicator of the impacts of invasive annual grasses to sage-grouse habitat suitability.

Collectively, this research indicates that invasive annual grasses can reduce habitat suitability for nesting and brood-rearing greater sage-grouse at the site-scale and that habitat suitability generally decreases as invasive annual grass cover increases. It is recommended that invasive annual grass cover be included as a habitat suitability indicator for sage-grouse habitat assessments conducted at the HAF site-scale, as described in the Recommendations section below.

Table 1. The table below lists and describes key aspects and findings from research that has examined the relationship of invasive annual grass cover to greater sage-grouse habitat selection and/or survival at the site-scale (i.e., microhabitat). Note that no studies specifically examined the potential impacts of invasive annual grasses on Gunnison sage-grouse.

Citation	State	Scale/ Extent	Season	Applicable Findings
Coates et al. 2017	NV	10m of nest	Nesting	Mean invasive annual grass cover at nests was 4.8% in xeric sites and 5.1% in mesic sites. Authors recommended suitability categories: • xeric sites (suitable is <2.5%, marginal is 2.5 – 4.8%, unsuitable is >4.8%) and • mesic sites (suitable is <2.5%, marginal is 2.5 – 5.2%, unsuitable is >5.2%)
		10m of brood	Brood-rearing	Mean invasive annual grass cover at brood sites was 4.3% in xeric 4.79% in mesic. Authors recommended suitability categories: • xeric sites (suitable is <2.5%, marginal is 2.5 – 4.3%, unsuitable is >4.3%) and • mesic sites (suitable is <2.5%, marginal is 2.5 – 4.8%, unsuitable is >4.8%)

Citation	State	Scale/ Extent	Season	Applicable Findings
Dinkins et al. 2016	WY	5m of nest	Nesting	Mean invasive annual grass cover at nests 2.14% (SE=0.11) which was higher but similar to random sites with a mean of 1.75% (SE=0.10).
Kirol et al. 2012	WY	8m of nest	Nesting	Nest selection was negatively related to the presence of cheatgrass when compared to available habitat. "Cheatgrass occurred at 6% of the nest locations and 19% of the corresponding random locations."
Lockyer et al. 2015	NV/CA	0.01ha of nest	Nesting	Average cover of cheatgrass at nests and random sites was 7.1% (SE=1.0) and 13.3% (SE=1.2), respectively. Sites with >7.1% cheatgrass cover had lower nest success. Cheatgrass was the single greatest micro-habitat feature distinguishing nests from random sites.
Schreiber et al. 2015	WY	20m of brood	Brood-rearing	Cheatgrass cover was lower at early brood-rearing sites (0.55% +/-0.38%) than at random points (0.71% +/-0.30%) but similar. Cheatgrass cover was lower at late brood-rearing sites (1.44% +/-0.65%) than at random points (2.13% +/-0.72%) but similar.
Stonehouse et al. 2015	WA	-	Nesting	Mean cover of invasive annual grasses at nest sites was 13% (SE=1); random sites were not assessed.
Wik et al. 2002	ID	20m of nest	Nesting	All nests had an average of 3% cover. Successful nests had lower average cheatgrass cover (1% in 20m transect) than unsuccessful nest (4% in 20m transect).
		20 m of brood	Brood-rearing	All broods had average of 5% cheatgrass. Unsuccessful broods has lower cheatgrass (2% in 20m) at use-sites than successful broods (6% in 20m).
Wing et al. 2014	UT	15m of nest	Nesting	All nest, brood, and non-brooding use sites had cheatgrass which was similar in cover to random sites. Cheatgrass cover means: Nest mean = 17.6% (0.8), Brood mean = 15.6% (0.8), non-brood females and males = 14.3% (0.7), random sites mean = 15.9% (0.8).

RECOMMENDATIONS

Based on the findings of the research summarized above (**Table 1**), invasive annual grass cover should be assessed as a habitat indicator for nesting/early brood-rearing, late brood-rearing, and wintering habitat during a HAF site-scale assessment using the following benchmarks, adjusted as warranted by best available science. Note that these benchmarks were based more heavily on research that examined nest and brood *success* relative to invasive annual grass cover (more so than research that examined *use versus availability* of habitat) because sage-grouse have been shown to exhibit maladaptive site selection (Coates et al. 2017, Brussee et al. 2022, Cutting et al. 2019). Invasive annual grasses are not assessed at the site-scale for leks because the AIM strategy does not include leks in its sampling strategy; however, invasive annual grasses are assessed for lekking habitat at the HAF *fine-scale*. There was not sufficient research to suggest different benchmarks for winter habitat due to a lack of research on winter habitat as compared to nesting and brood-rearing. If future research indicates otherwise, benchmarks may be adjusted accordingly.

Table 2. Recommended habitat suitability benchmarks for assessing invasive annual grass at the HAF site-scale.

Habitat Indicator	Metric	Benchmarks		
		Suitable	Marginal	Unsuitable
Invasive Annual Grass	% cover	<2%	2 – 5%	>5%

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Attachment 4-2. Justification for Conifer as a Habitat Suitability Indicator at the Sage-grouse Habitat Assessment Framework (HAF) Site-Scale

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BACKGROUND

Recent research has shown that conifer expansion into native sagebrush communities can reduce habitat suitability for sage-grouse (Nisbet et al 1983, Doherty et al. 2010, Fedy et al. 2014, Doherty et al. 2016, Westover et al. 2016, Baxter et al. 2017, Picardi et al. 2020, Saher et al. 2021, Brussee et al. 2022, Roth et al. 2022). The Bureau of Land Management (BLM) uses the Sage-grouse Habitat Assessment Framework (HAF; Stiver et al. 2015) to assess sage-grouse habitat suitability at multiple spatial scales (mid-, fine- and site-scale) by examining scale-specific indicators that represent both habitat requirements (i.e., food, water, cover, security) and threats to habitat (i.e., anthropogenic disturbances, predation risk). However, conifer cover is not included as an indicator of habitat suitability at any scale of the HAF (Stiver et al. 2015). This omission has been recognized by BLM personnel as a shortcoming of the HAF that should be remedied, as supported by scientific literature.

The purpose of this document is to:

- Provide scientifically based rationale for including conifer as an additional habitat indicator in HAF site-scale habitat assessments (Stiver et al. 2015, revised), and
- Recommend scale-specific thresholds for conifer for HAF site-scale assessments based on scientific literature relevant to that scale.

RATIONALE

Studies that examine site-scale sage-grouse habitat (also referred to as microhabitat) often do not report or analyze conifer as a habitat characteristic, likely because it is not a habitat requirement of sage-grouse but rather a deterrent, especially at such a small scale (e.g., within 10m of a nest site). In a review of over 40 peer-reviewed microhabitat studies on sage-grouse, no study reported conifer cover as a standard microhabitat characteristic for sage-grouse (such as sagebrush cover, grass height, forb cover) nor did they test for a relationship between conifer and sage-grouse. A few studies, such as Duvuvuei 2013 and Wing 2014, reported frequency of nests located under conifer in Utah (see **Table 1**). Wing 2014 reported that nesting under juniper was rare and that only one of those nests was successful. Duvuvuei 2013 showed that nests were commonly placed under junipers, especially by translocated females, but suggested that use of juniper for nesting was due to maladaptation caused by a lack of sagebrush cover and extensive juniper expansion into the study area.

Most studies that examine the potential impacts of conifer on sage-grouse and their habitat are conducted at landscape scales, typically estimating conifer cover near sage-grouse locations (e.g., within 1,000m of a

nest site) using remotely sensed landcover data. These studies have established that conifer cover, even in low amounts (e.g., <2 % cover), can negatively impact sage-grouse across all seasons (lekking, nesting, brood-rearing and wintering) causing avoidance and/or reduced vital rates (Nisbet et al 1983, Doherty et al. 2010, Fedy et al. 2014, Doherty et al. 2016, Westover et al. 2016, Baxter et al. 2017, Picardi et al. 2020, Saher et al. 2021, Brussee et al. 2022, Roth et al. 2022). However, these findings are mostly applicable to HAF mid- and/or fine-scale assessments which are also landscape level.

Given the established negative impacts of conifer cover on sage-grouse at landscape scales and the lack of conifer being reported in microhabitat studies (i.e., suggesting avoidance of conifer at site-scales), it is recommended that conifer be included as a habitat suitability indicator for sage-grouse habitat assessments conducted at the HAF site-scale, as described in the Recommendations section below.

Table 1. The table below lists and describes key aspects and findings from research that has examined the relationship of conifer to greater sage-grouse habitat selection and/or survival at the site-scale (i.e., microhabitat). Note that no studies specifically examined the potential impacts of invasive annual grasses on Gunnison sage-grouse.

Name	Tree Type	State	Season	Applicable Findings
Wing 2014	Juniper	UT	Nesting	GRSG females rarely selected juniper as a nesting shrub (n=4) and only one nest was successful.
Duvuvuei 2013	Juniper	UT	Nesting	Translocated GRSG females (24%) nested under juniper but was accredited to lack of sagebrush cover and extensive conifer expansion in study area.

RECOMMENDATIONS

Based on the rationale above, conifer should be assessed as a habitat indicator during HAF site-scale assessments for nesting, brood-rearing, and wintering habitat. Conifer is not being added as an additional indicator in lek assessments because existing lek indicators already incorporate conifer and other trees. The metric used to assess conifer suitability is the count of conifer and, if available, the height of those conifer relative to surrounding sagebrush (or native shrubs, if used as a surrogate), using the benchmarks shown below (adjusted as warranted by best available science). Percent conifer is not recommended as the primary metric for conifer suitability because there is insufficient science to support a benchmark at the site-scale; however, percent conifer cover may still be used as ancillary information, as interpreted by local experts, to support assessment of conifer as a habitat suitability indicator.

Table 2. Recommended habitat suitability benchmarks for assessing conifer at the HAF site-scale.

Habitat Indicator	Metric	Benchmarks		
		Suitable	Marginal	Unsuitable
Conifer	Count	• 0 trees (absence of conifer)	If height is unknown: • 1 tree If height is known: • 1 tree that is taller than local average sagebrush height, and/or • <=3 trees that are not taller than local average sagebrush height	If height is unknown: • >1 tree If height is known: • >1 tree that is taller than local average sagebrush height, and/or • >3 trees that are not taller than local average sagebrush height

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Appendix 5

Livestock Grazing Best Management Practices and Design Features and Supplemental Information

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Appendix 5. Livestock Grazing Best Management Practices and Design Features and Supplemental Information

5.1 Livestock Grazing Management Best Management Practices and Design Features

The following best management practices (BMP) provide a list of strategies, practices, or design features to be considered during implementation of the Approved RMP Amendment. These measures are not required to be considered in every instance but can be useful to aid in proper livestock grazing management in GRSG habitats. The applicability and overall effectiveness of each BMP cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some BMPs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations. For example, variations could be required for the following reasons:

- A specific BMP is not applicable to the site-specific conditions of the project/activity.
- An alternative BMP, a state-implemented conservation measure, or plan-level protection provides equal or better protection for GRSG or its habitat.
- A specific BMP will not avoid or minimize impacts to GRSG or its habitat.

5.1.1 Coordination

- 43 CFR 4100 regulations direct BLM to consult, cooperate and coordinate when engaging in program work. The BLM coordinates with Federal, State, county, Indian tribal and local governmental entities, institutions, organizations, corporations, associations, and individuals when authorizing grazing on BLM lands. In GRSG habitat management areas, these communication efforts should include coordination on how livestock grazing practices could be managed across both BLM-administered lands and voluntarily on non-BLM-administered lands, in partnership with interested permittees and lessees, to improve GRSG habitat conditions.

5.1.2 Best Management Practices for Livestock Grazing Management

1) Set priorities for grazing management activities (e.g., monitoring, authorization renewals, field checks) following direction in agency policy or implementation guidance. When considering competing priorities in GRSG habitat, considerations should include level of management priority (PHMA, IHMA, vs GHMA) and focusing on areas where current livestock grazing management is a significant causal factor to not meeting or making significant progress towards meeting Idaho's Land Health Standard (LHS 8), and those containing riparian areas, including wet meadows. Other criteria for prioritization can include the need to respond to urgent natural resource concerns (e.g., fire) and legal obligations.
2) When current livestock management practices are determined to not be meeting or making progress towards meeting the LHS 8 (following appropriate consultation, cooperation and coordination, consistent with BLM Handbook H-4180-1), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications, either within the existing terms and conditions or considered as additional

alternatives in grazing authorization NEPA analysis as a threshold/response, (not presented in any priority order) could include, but are not limited to, changes in:

a. Season or timing of use;
b. Numbers of livestock;
c. Distribution of livestock use;
d. Duration and/or level of use;
e. Kind of livestock (e.g., cattle, sheep, horses, or goats) (Briske et al. 2011); and
f. Range improvements.

3) Locate supplements (salt, mineral, protein, etc.) away from water sources, meadows, riparian areas, swales, and GRSG leks in locations that increase livestock distribution unless effective control of livestock to avoid detrimental impairment of any riparian area or GRSG habitats can be ensured.
4) When using salt or mineral supplements, place them outside intact sagebrush stands to reduce impacts to GRSG breeding habitat. For example, place supplements in existing disturbed sites, areas with reduced sagebrush cover, to reduce impacts on GRSG breeding habitat.
5) During the lekking season, encourage minimal vehicle use and maintenance activities associated with livestock management during lekking (before 9 am and after 6 pm) within 0.6 miles of an active or pending active lek.
6) To decrease attracting predators or decreasing water quality, whenever found and wherever possible, remove dead livestock from GRSG habitat and dispose of in ways that does not attract predators to GRSG habitat. If it is not possible to entirely remove livestock carcasses, they should, at a minimum, be removed from riparian areas and water sources.
7) In PHMA, IHMA (in Idaho), and GHMA, areas that have received vegetation treatments should be rested from livestock grazing until resource monitoring data verifies the treatment objectives specific to the purposes of the treatment are being met and an appropriate grazing regime has been developed. Examples of vegetation treatments include seedings, hazardous fuels reduction treatments, emergency stabilization and rehabilitation efforts.
8) Avoid disturbing lekking and roosting GRSG from human, guard animal, and sheep activities by trailing, overnighting, watering, and bedding sheep on public lands at least 0.6 miles from active or pending active leks (dates of lek activity determined locally, approximately March 15–May 1 in lower elevations and March 25–May 15 in higher elevations).
9) When trailing livestock during the lekking or nesting season, use roads or existing trails, to the extent possible.
10) When available, use GRSG habitat use-pattern mapping or habitat monitoring to strategically adjust livestock distribution to benefit occupied GRSG breeding habitat, include herding, salting, and water-source management (e.g., turning troughs/pipelines on/off and extending pipelines/moving troughs) in grazing programs.
11) Ensure that permittees are informed of management and movement requirements related to avoiding recent burns, habitat rehabilitation, or other restoration sites.
12) Identify and, when feasible, establish strategically located forage reserves, focusing on areas where restoration to GRSG habitat is unlikely or lower priority habitat restoration areas.

5.1.3 Design Features for Range Improvements

1) When installing new range improvement projects in PHMA/IHMA, avoid construction during the applicable seasonal use periods associated with lekking, nesting, or brood rearing seasonal habitats

(March 1 – July 15, or as identified for local variability in coordination with the state wildlife agency or other appropriate agency with management expertise and authority).

2) Use temporary range infrastructure, such as troughs, fences, and supplements, where feasible and appropriate, to meet management objectives.
3) Install shutoff valves at spring sources and troughs. Ensure shutoff valves are closed and troughs are drained when livestock are not utilizing the pasture, as consistent with the water laws of the State within which the land is located.
4) Install lids on spring collection boxes.
5) Install floats in troughs to prevent overflow and keep water at spring sources, as consistent with the water laws of the State within which the land is located.
6) Ensure that new and existing livestock troughs and open water storage tanks are fitted with ramps to facilitate the use of and escape from troughs by GRSG and other wildlife; do not use unsecured, unstable, or ineffective items such as floating boards or similar objects.
7) Locate troughs outside meadows, swales, and riparian areas.
8) Design new water developments to maintain hydrologic function of spring sources, water courses and associated riparian habitat, as consistent with State water laws.
9) Consider virtual fencing opportunities, as appropriate.
10) To minimize risk of noxious or invasive plant spread, require all heavy equipment used in construction of range improvements to be thoroughly cleaned of all soil and plant material prior to entering public lands.
11) To minimize livestock concentration impacts on nesting and early brood rearing sage-grouse, locate new livestock handling facilities (such as corrals) away from active or pending active leks and outside of nesting habitat at least by 1.2 miles (Manier et al. 2014). Where corrals already exist, minimize activity to the extent possible to accomplish livestock management objectives outside nesting and early brood rearing season.
12) Design new and maintain existing water projects to avoid standing pools of shallow water that could spread West Nile Virus.

5.1.4 Drought Response

- When completing a fully processed grazing authorization in GRSG habitat, incorporate strategies for livestock management during drought conditions.
- During drought conditions use a recognized drought indicator, such as the Drought Monitor, Vegetation Drought Response Index, or Palmer Drought Severity Index, to determine when abnormally dry or drought conditions are developing, present, or easing. When such conditions are developing or present:
  - Conduct pre-season assessments prior to livestock turn out.
  - Monitor vegetation conditions during authorized livestock use periods to determine need for early removal and/or other changes to meet seasonal RMP objectives.
- During drought periods, prioritize evaluating effects of drought in PHMA relative to GRSG needs for food and cover (including riparian areas); ensure that post-drought management allows for vegetation recovery, based on ecological potential, that meets GRSG needs in priority GRSG habitat areas. Where ESDs or STMs are lacking for an area, the best available information to achieve the GRSG needs should be used.
- If livestock grazing is deferred due to drought, reevaluate vegetation and GRSG habitat indicators that measure GRSG habitat prior to reauthorization of grazing.

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Appendix 6

BLM Adaptive Management Process

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Appendix 6. BLM Adaptive Management Process

The BLM will implement GRSG adaptive management in coordination with existing or future state-level interagency adaptive management teams and use the best available scientific information, including GRSG population status as determined by State GRSG authorities. Composed of knowledgeable BLM and State GRSG authorities and working groups, interagency adaptive management teams will provide GRSG habitat management information to the BLM authorized officers. The BLM will work with the appropriate agencies to inform and implement the most recent State adaptive management processes, consistent with the framework outlined in this appendix.[1]

Key elements of the GRSG adaptive management process set forth herein include (1) monitoring habitat conditions and population status (e.g., abundance and trends) analysis units, (2) establishing and routinely assessing thresholds for habitat conditions and population status indicating unanticipated GRSG habitat impacts, (3) conducting causal factor analyses (CFA) of thresholds that have been met, and (4) employing management decisions and actions in response to thresholds and CFAs.

6.1 Analysis Units

To accurately inform adaptive management, the status of GRSG habitat and populations will be monitored and thresholds assessed at a scientifically appropriate scale and within comparable spatial analysis units. The BLM will specify the spatial analysis unit, in coordination with State GRSG authorities, applied when implementing adaptive management. Some threshold assessments, CFAs, and adaptive management responses may need to extend beyond individual spatial analysis units to address large-scale unanticipated negative impacts to GRSG habitat.

6.2 Habitat Thresholds

Habitat Threshold Activation – The BLM's adaptive management process specifies habitat thresholds for negative changes to GRSG habitat condition. The BLM will routinely assess the following habitat thresholds, which may be revised by the BLM as warranted through appropriate additional decision-making with newly available scientific information, and will document data and rationale for activated thresholds:

1. A soft habitat threshold will be activated when more than 5% of the suitable habitat (as defined as areas capable of supporting sagebrush) of Priority Habitat Management Areas (PHMA) and Important Habitat Management Areas (IHMA) spatial analysis unit is lost during a given year (including losses to wildfire). Percent sagebrush loss will be calculated only on PHMA and IHMA portions of a spatial analysis unit that may also contain other HMA designations (e.g., GHMA). Baselines for calculating sagebrush loss will be specified by the sagebrush base layer delineated with the most recent LandFire data (detailed in Appendix 3) available at publication of the Approved RMPA and ROD.

[1] The Federal Land Policy and Management Act (FLPMA) requires the BLM, to "resolv[e], to the extent practical, inconsistencies between Federal and non-Federal Government plans," and achieve consistency with State and local plans to the maximum extent that the BLM finds to be consistent with the laws governing public lands. 43 USC 1712(c)(9). See also 43 CFR 1610.3-1.

2. A hard habitat threshold will be activated when suitable habitat, as defined above, in PHMA/IHMA within a spatial analysis unit decreases below 65% (Aldridge et al., 2008; Connelly et al., 2000).
3. A hard habitat threshold will also be activated when a soft habitat threshold occurs as calculated from baseline in 4 consecutive years (i.e., >5% decline in each of 4 consecutive years).
4. All habitat thresholds activated will be verified through ground-truthing as described in the "Causal Factor Analysis (CFA)" section below.

Habitat Threshold Deactivation – Habitat threshold deactivation will be determined by the BLM in coordination with State GRSG authorities, and state-level interagency adaptive management teams where occurring. Data and rationale for deactivating a threshold will be documented. Deactivating habitat thresholds will correspond to the following criteria:

1. Soft and hard habitat thresholds can be deactivated if the quantity of sagebrush vegetation communities within the affected spatial analysis unit recover to sagebrush conditions and/or habitat function existing prior to a habitat threshold being activated.
2. If a spatial analysis unit cannot be restored to original sagebrush conditions and/or habitat function due to ecological or disturbance limitations (e.g., intense wildfire-killed soil microfauna, dense anthropogenic activities, etc.), restoration and/or habitat enhancement in adjacent spatial analysis units can be considered to increase GRSG abundance in those areas. In these situations, habitat threshold deactivation occurs when regional GRSG abundance recovers as determined by State GRSG authorities to levels present prior to the threshold being activated.
3. If enhancing habitats in adjacent spatial analysis units does not deactivate a threshold, further assessment may be necessary to determine if the area in which the habitat threshold occurred should still be considered GRSG habitat.

6.3 POPULATION THRESHOLDS

Population Threshold Activation – Although BLM does not manage GRSG, GRSG population status can provide valuable information about habitat conditions on BLM-administered lands. In addition to habitat thresholds, the BLM's adaptive management process specifies population thresholds as indicators of potential habitat condition changes and unanticipated negative impacts to GRSG. States lead GRSG population data collection and determination of population status, often in coordination with state-level interagency adaptive management teams. Therefore, threshold activation will be determined in coordination among BLM, State GRSG authorities, and state-level interagency adaptive management teams where occurring. In addition, State GRSG authorities should alert the BLM any time an internal assessment identifies population status concerns warranting activation of population thresholds. The BLM will document data and rationale for activating population thresholds, including population status input and recommendations from State GRSG authorities.

Population Thresholds – The BLM will review population trend assessments provided by the States, annual Hierarchical Population Monitoring Framework (HPMF) results (when available, Coates et al. 2021 and subsequent updates or revisions), and other available scientific information to inform potential habitat concerns in PHMA and IHMA. State GRSG authorities receive HPMF results in advance of public releases. Therefore, State GRSG authorities can provide the BLM with early alerts of both soft and hard population thresholds that may need a CFA (note: the BLM does not receive lek specific information from the HPMF).

To the extent the HPMF's Targeted Annual Warning System (TAWS) is consistent with State adaptive management processes and the best available science, and therefore utilized by the BLM, activation of the HPMF thresholds correspond to the following definitions:

1. Activation of a soft population threshold is equivalent to a TAWS "watch," which is defined as 2 consecutive years of population decline within a neighborhood cluster that is either different or more rapid than the associated climate cluster.
2. Activation of a hard population threshold is equivalent to a TAWS "warning," which is defined as 2 out of 3 (fast) or 3 out of 4 (slow) consecutive years of population decline within a neighborhood cluster that is either different or more rapid than the associated climate cluster.

HPMF Population Threshold Deactivation – Where applied, HPMF population threshold deactivation will be determined by the BLM in coordination with State GRSG authorities, and state-level interagency adaptive management teams where occurring. The BLM will document data and rationale for deactivating a population threshold. To the extent TAWS is consistent with State adaptive management processes and the best available science, and therefore utilized by the BLM, deactivating HPMF population thresholds will correspond to the following criteria:

1. The affected population's trend is no longer a "watch" or "warning" within a neighborhood cluster and realigns with the climate cluster's trend for 3 consecutive years; or
2. The affected population's abundance or growth rate are sufficient for recovery as determined by and with concurrence of State GRSG authorities; or
3. The BLM and State GRSG authorities determine threshold results were in error.

Population Threshold Verification – The BLM and State GRSG authorities will jointly verify each activated population threshold, preferably within 60 days, to assess if habitat factors may be influencing the suspected population threshold. If BLM and State GRSG authorities agree a threshold was activated in error, the BLM will document information substantiating the error and threshold deactivation as may be warranted. In the event of a disagreement, BLM and State GRSG authorities will coordinate to resolve the disagreement by further assessing and documenting potential threshold analysis errors. If a disagreement persists, the appropriate BLM State Director will collaborate with BLM State and National GRSG coordinators and local BLM field biologist, as needed, to evaluate threshold results and determine if a CFA is prudent. The BLM State Director will advise the State GRSG authorities of BLM's threshold verification conclusion.

6.4 CAUSAL FACTOR ANALYSIS (CFAS)

CFA Teams – CFA teams will identify factors causing thresholds to be activated and recommend adaptive management responses to deactivate thresholds. CFA team composition should minimally include the local BLM biologist, BLM State Sage-grouse Lead, and at least one representative from the State GRSG authorities. Additional subject matter experts, stakeholders with local knowledge, and other affected parties may be included on CFA teams as appropriate for site-specific analyses or as consistent with existing CFA team structures.

Formal CFA – The BLM, in coordination with the CFA team, will perform a CFA and prepare a report for each activated and verified habitat and population threshold. Formal CFAs will be performed for activated thresholds with one or more potential causal factors that are not obvious (in contrast to the Rapid Assessment CFA described below). CFAs will identify factors causing thresholds to be activated and recommend adaptive management responses to deactivate thresholds. Substantive disagreements about

causal factors will be noted in the CFA report along with the basis of the disagreements. CFAs and reports will be completed within 12 months from the threshold being activated. BLM will prepare a CFA report even if no causal factors are identified. Upon completion, CFA reports will be submitted to the appropriate local BLM manager, BLM State Sage-grouse Lead, BLM National GRSG Coordinator, State GRSG authorities, and CFA team. CFA reports will include, but not be limited to, the following information about the activated threshold and affected spatial analysis unit(s):

1. Descriptions of existing land uses.
2. Landownership patterns.
3. GRSG population trends.
4. Habitat conditions and trends.
5. Factor(s) causing the habitat and/or population declines and threshold activation.
6. Recommended management actions to address causal factors.
7. Data and expertise used to reach CFA conclusions.

Rapid Assessment CFA – A rapid assessment CFA can be performed instead of a formal CFA for activated thresholds with obvious causal factors (e.g., large wildfire or other discrete events). Rapid assessments may be conducted by the BLM or appropriate State GRSG authorities, or both, but results should be confirmed by all parties. Causal factors identified during a rapid assessment will be documented and reported to the appropriate local BLM manager, BLM State Sage-grouse Lead, BLM National GRSG Coordinator, State GRSG authorities, and CFA team. If a rapid assessment identifies no obvious causal factor, a formal CFA will be completed within 12 months of the threshold being activated.

6.5 ADAPTIVE MANAGEMENT RESPONSES:

Threshold Responses – The BLM will implement adaptive management responses to address factors causing habitat or population threshold activation as specified in CFA reports and rapid assessment documentation. In accordance with applicable law and prior existing valid rights, the BLM may modify authorizations of existing activities and defer authorization of proposed new activities to avoid, minimize, or otherwise mitigate GRSG impacts on BLM-administered lands from causal factors. Through project-level analysis conducted under the National Environmental Policy Act (NEPA), the BLM will evaluate if a proposed new activity could contribute to an activated threshold or cause a future threshold activation. Implementing habitat improvement projects should also be considered if likely to reverse thresholds. The BLM will coordinate adaptive management responses with State GRSG authorities and state-level interagency adaptive management teams where occurring.

Spatial Scale and Monitoring – The BLM will target adaptive management responses at the spatial scale and within the spatial analysis unit at which a threshold is activated. However, a CFA team may recommend expanding the spatial extent of adaptive management analyses and recommended responses beyond individually activated spatial analysis units to address large-scale unanticipated negative impacts to GRSG habitat. Monitoring of the affected habitat or population (or both if appropriate) will be necessary to assess the efficacy of adaptive management responses for deactivating thresholds.

Non-BLM administered lands – CFAs and corresponding adaptive management responses should consider if threshold activation in PHMA/IHMA is due to actions on non-BLM administered lands. If a threshold is activated from actions on adjacent non-BLM administered lands, the BLM can consider authorizing proposed new activities that will not negatively impact GRSG habitat or populations on BLM-administered lands or

contribute to indirect or cumulative impacts. The BLM may also consider additional adaptive management responses as needed to prevent further GRSG habitat impacts on BLM-administered lands. The BLM will document adaptive management determinations regarding non-BLM administered lands to address a threshold that has been activated due to activities that occurred on non-BLM-administered lands.

Thresholds – The BLM can consider authorizing proposed new activities during a CFA if the activities will cause no GRSG mortality or direct loss or degradation of occupied GRSG habitat. After completing the CFA, the BLM can consider activity authorizations and reauthorizations if similar activities were neither causal factors nor contributing factors of the activated threshold. Project-level NEPA will evaluate if authorizing a proposed new activity could cause a threshold to be sustained or reactivated.

Threshold Modification – If supported by local data, a CFA team can review and recommend modifying the activated threshold level, and corresponding adaptive management responses, from (1) soft-to-hard or (2) hard-to-soft. Threshold modifications must be supported by data and detailed in a written report that is approved by the BLM authorized officer in consultation with State GRSG authorities and local CFA team.

Exceptions to Threshold Responses – The BLM will coordinate with permittees and project proponents to reduce potential GRSG impacts from the following exceptions to adaptive management responses for activated thresholds:

1. Renewal of existing authorized activities that require an authorization if:
    a. The activity is scheduled within 60 days of when a threshold is identified and activated, and
    b. The permittee or project proponent can demonstrate significant negative economic impacts (e.g., documented loss of income equivalent to the income potential of the activity), and
    c. The renewal can only be considered if it does not result in known negative impacts to GRSG habitat or populations.
2. Activities essential for human health and safety in a current or likely catastrophic event (e.g., repair of dams, emergency vehicle access, emergency utility repairs). Note: routine maintenance and operations of electric utility ROWs may continue as outlined in 43 CFR 2801 and authorized ROW grants.
3. Emergency Stabilization and Rehabilitation activities for post-wildfire restoration.
4. A livestock grazing permit or lease to extend the current livestock grazing practice may be renewed, but only for the period/duration needed to complete the CFA. If livestock grazing is not determined as a causal factor to an activated threshold, the subsequent livestock grazing permit or lease renewal can proceed normally. If livestock grazing is identified as a causal factor to an activated threshold, the terms and conditions of the subsequent livestock grazing permit or lease will need to be examined through NEPA and potentially modified to reduce or eliminate negative habitat impacts.
5. Continuing the terms and conditions for livestock grazing when a permit or lease has expired or was terminated due to a livestock grazing preference transfer in accordance with Section 402(c)(2) of the Federal Land Policy and Management Act (FLPMA).

Inconclusive CFAs – If a CFA identifies no causal factor for an activated threshold, the BLM may consider additional project-level restrictions on existing or new activity authorizations within the spatial analysis unit of the activated threshold. The BLM will implement activity restrictions in coordination with permit holders and State GRSG authorities and in accordance with applicable law and prior existing valid rights. The BLM will document the biological rationale for restrictions. New authorizations must disclose that a threshold

has been activated and consider potential cumulative impacts on GRSG habitat and State-managed populations. In addition to activity restrictions, the BLM should implement habitat improvement projects to promote threshold deactivation. The BLM should monitor habitat conditions associated with inconclusive CFAs and document new information as a CFA report addendum or in annual adaptive management reports. CFAs not completed within 12 months will not be considered inconclusive and should be prioritized for completion.

Adaptive Management Response Removal – After corresponding thresholds are deactivated, the BLM will remove activity management actions, adjustments, or stipulations implemented as adaptive management responses on authorized activities, coordinated with permittees. BLM will also consider authorizing new proposed activities within associated spatial analysis units after thresholds are deactivated.

6.6 HABITAT THRESHOLDS DUE TO WILDFIRE

If wildfire causes habitat threshold activation, the BLM will coordinate with State GRSG authorities and assess actual wildfire impacts to GRSG habitat within the wildfire perimeter, including the extent of lost habitat, burn severity, and sagebrush mortality, except as defined in the Exceptions to Threshold Response above. The BLM will perform post-wildfire GRSG habitat assessments, which can include an initial rapid assessment CFA, in addition to a BLM Emergency Stabilization and Rehabilitation review that might also occur. If the GRSG habitat assessment concludes that wildfire severity permanently precludes habitat restoration, the BLM may perform additional assessments to determine if the wildfire-affected area should not be considered GRSG habitat. Post-wildfire GRSG habitat assessments and associated determinations will be documented and reported to the BLM State Director, BLM State Office Sage-grouse Lead, National BLM GRSG Coordinator, and State GRSG authorities.

The BLM will complete post-wildfire GRSG habitat assessments before the next growing season following the fire. Until a post-wildfire GRSG habitat assessment is completed, the BLM will authorize no new activities that could cause more GRSG habitat loss or degradation within PHMA/IHMA portions of the wildfire-affected spatial analysis unit(s) where the habitat threshold is activated. The threshold will be deactivated if the assessment concludes that wildfire did not reduce the availability of habitat services (i.e., food, cover, water, and connectivity) necessary to support pre-wildfire GRSG abundance. State GRSG authorities will determine pre-wildfire GRSG abundance and participate in the assessment of wildfire effects on GRSG abundance and habitat services. If pre-wildfire GRSG abundances are not supported, the BLM may defer authorizing new activities in accordance with applicable law and prior existing valid rights until the threshold is deactivated and the wildfire-affected area again supports pre-wildfire GRSG abundances. The BLM may consider authorizing new activities prior to threshold deactivation only if the activity will neither directly nor indirectly impact the wildfire-affected GRSG populations, as determined in coordination with State GRSG authorities.

Appendix 7

US Fish and Wildlife Service Concurrence Memo

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
334 Parsley Blvd.
Cheyenne, Wyoming 82007

In Reply Refer to:
FWS/R6/2025-0029235

Memorandum

To: Frank Quamen, Division Chief, Division of Wildlife, Aquatics, and Environmental Protection, Bureau of Land Management, Headquarters

TYLER ABBOTT Digitally signed by TYLER ABBOTT Date: 2025.10.22 08:39:25 -06'00'

From: Tyler Abbott, Field Supervisor, Wyoming Ecological Services Field Office

Subject: Informal Consultation on the Bureau of Land Management's Greater Sage-grouse Rangewide Planning Changes to Proposed Resource Management Plan Amendments for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming

This memorandum responds to the Bureau of Land Management's (BLM) September 10, 2025 email and attached amendment to the Biological Assessment (BA) issued by BLM on December 6, 2024 for the Greater Sage-Grouse Proposed Resource Management Plan Amendment (RMPA) and Final Environmental Impact Statement (FEIS). The BLM is requesting the Fish and Wildlife Service's (Service) concurrence that the proposed changes to management actions, as described in their September 2, 2025 Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document "may affect, but are not likely to adversely affect" federally-listed or proposed species, non-essential experimental populations, or designated or proposed critical habitats that occur on BLM-administered lands in portions of the states of California, Idaho, Montana, Nevada, North Dakota, South Dakota, Utah, and Wyoming (see Species and Critical Habitat List, Attachment A).

At a programmatic level, BLM evaluated the impacts of the proposed changes in management direction to be applied for the enhancement of Greater Sage-grouse (GRSG) conservation in portions of the aforementioned states, on listed species and their critical habitats that are known to, or could, occur within BLM-administered lands. The Service provides this response pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended.

Previous Greater sage-grouse Resource Plan Amendment Section 7(a)(2) Consultations

On January 8, 2025, the Service completed an informal consultation on the BLM's GRSG Proposed RMPA and FEIS. This consultation applies only to the states of Colorado and Oregon, as those states issued final Records of Decision (ROD) on January 15, 2025, and no further changes to management actions are planned in the near term. The remaining RODs for Idaho,

Montana/Dakotas, Nevada/California, Utah, and Wyoming were not finalized, and are proposed to include the changes described in the BLM's September 2, 2025 Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document. These proposed changes to management actions are the subject of the current consultation.

In 2015, BLM signed RODs for the Rocky Mountain and Great Basin regions Approved RMPAs addressing conservation measures for the GRSG and its habitat. In general, land use planning efforts such as these are best described as a strategy for completing site-specific actions; the strategy itself has no effect on listed species or critical habitats that can be meaningfully evaluated. The Service subsequently consulted on implementation of these RMPAs on a state-by-state basis, and concurred with BLM's determinations for the states of California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, and Wyoming. Due to potential conflicts between habitat management objectives for GRSG and those for the Utah prairie dog (UPD; *Cynomys parvidens*), for the state of Utah, the Service determined that the proposed action may affect, and was likely to adversely affect, the UPD. Formal consultation was completed, within which the Service provided conservation measures (Attachment B) to be implemented in instances where UPD and GRSG habitat management goals were in conflict. These conservation measures remain in place for the proposed 2025 Utah ROD.

Description of the Action

The BLM worked with state wildlife agencies to adjust habitat management area alignments from the 2015 RMPAs based on new scientific information and documentation of GRSG use within the 10 western states included in the Greater Sage-Grouse Proposed RMPA and FEIS. Habitat management areas are characterized as Priority Habitat Management Area (PHMA) or General Habitat Management Area (GHMA), with PHMA having a higher protected status. Potential impacts to listed species and critical habitats were analyzed within the revised PHMA and GHMA boundaries, with consultation specifically requested by BLM on the following proposed management direction changes:

- Adjustments to habitat management areas, including a subset of PHMA with suggestions for limited exceptions for fluid energy development to provide additional conservation to GRSG habitats.
- Managing livestock grazing to meet Land Health Standards vs. strict GRSG habitat objectives.
- Where appropriate, directing wild horse gathers inside of PHMA.
- Identifying PHMA as exclusion for renewable energy development.
- Directing any new rights of way (ROW) outside of PHMA.
- Improving habitat condition to reduce the risk of GRSG predation.
- Implementing a multi-scale assessment of GRSG vs. managing to specific habitat objectives.
- Changing the scale for determining disturbance caps.
- Emphasizing the mitigation hierarchy and, if needed, ensuring consistency with State requirements for compensatory mitigation.

- Adjusting how adaptive management is calculated, both in technique and scale to allow for more biologically meaningful assessments.

In addition to (and in some instances, in lieu of) the management direction changes listed above and analyzed in the Service's January 8, 2025 informal consultation, the BLM requests consultation on the following September 2, 2025 proposed changes to management actions:

- Elimination of the PHMA with limited exceptions subset of the PHMA habitat allocation.
- Updating GHMA and PHMA boundaries in Utah.
- Changing the nesting habitat benchmark in Idaho and California/Nevada from a quantitative standard to a qualitative standard to account for habitat variability across the states.
- Changing the allocation for major rights of way in GHMA in Nevada from avoidance to open.
- Further adjustments to how adaptive management is calculated, both in technique and scale to allow for more biologically meaningful assessments.

These changes are to management directions only and inform how future on-the-ground actions will be framed; there are no on-the-ground actions directly implemented or authorized by these changes. As noted in the original BA and its amendment, any future project that implements these changed management directions at the individual Resource Management Plan (RMP) level will require site-specific Section 7(a)(2) consultation for any potentially affected species and/or designated critical habitats.

Conservation Measures

As noted above, the 2015 RMPA consultations resulted in the development of conservation measures (Attachment B) for the UPD in Utah to address potential conflicts between GRSG and UPD management. The 2025 RMPA will not change two of the three sets of management directions—each associated with specific project types—that prompted the need for the formal consultation in 2015. The third set of 2015 management directions addressed rights-of-way (ROW) management; the 2025 proposal will provide additional protections for GRSG and sagebrush habitats in ROWs by changing most of the areas of overlap (PHMA) from *avoidance* for new ROWs, to *exclusion*, which may reduce the threat of habitat modification for both UPD and GRSG. In the 2025 RMPA, BLM is committing to comply with the conservation measures in full and will conduct site-specific Section 7(a)(2) consultations for actions that may affect UPD. The BLM will continue to implement other measures to reduce impact to UPD from their key threats.

Conclusion

The BLM's programmatic action implements a program designed to enhance GRSG conservation through the amendment of existing RMPs in 8 states by implementing changes in management direction for 10 different allocative directions. Prior to the implementation of changes in management direction at the RMP level, BLM field offices will use the Service's Information for Planning and Consultation website (https://ipac.ecosphere.fws.gov/) to get the

most up-to-date species and critical habitat list for their project area. If BLM makes a "may affect" determination for listed species or critical habitats, BLM will initiate consultation with the Service. Consultation will include a site-specific analysis of potential effects to listed species or critical habitat from proposed actions associated with changes in management direction. During local level consultations, the BLM will be able to determine more specifically which species might be impacted by the proposed changes in management direction, the nature and extent of potential impacts, and if additional conservation measures are needed to reduce potential adverse effects to these species. Additionally, BLM does not need to reinitiate at the programmatic level for newly proposed or listed species or critical habitat, as that will be done at the local (RMP) level.

Based on BLM's commitment to implement conservation measures identified in their original BA and its amendment, and the requirement for site-specific consultations prior to the implementation of any management direction changes, the Service concurs that the proposed action is not likely to adversely affect threatened or endangered species, proposed species, non-essential experimental populations or designated or proposed critical habitats under the jurisdiction of the Service. If any subsequent action falls outside of the proposed changes in management direction to benefit GRSG conservation, BLM should evaluate the potential need to initiate formal consultation on that particular action, as it would fall outside the scope of this programmatic consultation.

This concludes informal consultation on BLM's Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document. In accordance with 50 CFR § 402.16, reinitiation of consultation is required and shall be requested by BLM or the Service where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) if new information reveals effects of the action that may affect listed species or critical habitat in a manner to an extent not previously considered; or (2) if the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this concurrence letter.

If you have any questions or require additional information, please contact Dawn Davis (dawn_davis@fws.gov) or John Hughes (john_hughes@fws.gov).

Attachment A: Species and Critical Habitat List
Attachment B: Utah prairie dog conservation measures

Attachment A. Listed Species and Critical Habitat Analyzed for the Bureau of Land Management's Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document.

Species	Status[1]	Critical Habitat?	Determination
Mammals			
Black-footed ferret (*Mustela nigripes*)	E, EXPN	No	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Canada lynx (*Lynx canadensis*)	T	Yes	Not likely to adversely affect
Gray wolf (*Canis lupus*)	E, EXPN	Not in action area	Not likely to adversely affect (E) Non-jeopardy (EXPN)
Grizzly bear (*Ursus arctos horribilis*)	T, EXPN	Yes	Not likely to adversely affect (T) Not likely to jeopardize (EXPN)
North American wolverine (*Gulo gulo luscus*)	T	No	Not likely to adversely affect
Northern long-eared bat (*Myotis septentrionalis*)	E	No	Not likely to adversely affect
Preble's meadow jumping mouse (*Zapus hudsonius prebei*)	T	Yes	Not likely to adversely affect
Tricolored bat (*Perimyotis subflavus*)	P, E	No	Not likely to adversely affect
Utah prairie dog (*Cynomys parvidens*)	T	No	Not likely to adversely affect
Birds			
California condor (*Gymnogyps californianus*)	E, EXPN	Yes	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Mexican spotted owl (*Strix occidentalis lucida*)	T	No	Not likely to adversely affect
Piping plover (*Charadrius melodus*)	T	Yes	Not likely to adversely affect
Rufa red knot (*Calidris canutus rufa*)	T	Yes	Not likely to adversely affect
Southwestern willow flycatcher (*Empidonax trailii extimus*)	E	Yes	Not likely to adversely affect
Whooping crane (*Grus americanus*)	E, EXPN	Yes	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Western yellow-billed cuckoo (Western DPS; *Coccyzus americanus*)	T	Yes	Not likely to adversely affect
Reptiles			
Northwestern pond turtle (*Actinemys marmorata*)	P, T	No	Not likely to adversely affect
Insects			
Carson wandering skipper (*Pseudocopaeodese unus obscurus*)	T	No	Not likely to adversely affect
Regal fritillary (*Speyeria idalia*)	P, T	No	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Silverspot (*Speyeria nokomis nokomis*)	T	No	Not likely to adversely affect
Mollusks/Snails			
Banbury Springs limpet (*Idaholanx festi*)	E	No	Not likely to adversely affect
Bruneau hot springsnail (*Pyrgulopsis bruneauensis*)	E	No	Not likely to adversely affect
Snake River Physa snail (*Physa natricina*)	E	No	Not likely to adversely affect
Amphibians			
Dixie Valley toad (*Anaxyrus williamsi*)	E	Yes	Not likely to adversely affect
Wyoming toad (*Bufo baxteri*)	E	No	Not likely to adversely affect
Fish			
Big springs spinedace (*Lepidomena milliispinis*)	T	Yes	Not likely to adversely affect
Bonytail (*Gila elegans*)	E	Yes	Not likely to adversely affect
Bull trout (*Salvelinus confluentus*)	T	Yes	Not likely to adversely affect
Chinook salmon (Snake River spring/summer run; *Onorhynchus tshawytsha*)	T	Yes	Not likely to adversely affect
Chinook salmon (Snake River fall run; *Onorhynchus tshawytsha*)	T	Yes	Not likely to adversely affect
Clover Valley speckled dace (*Rhinichthyus osculus oligoporus*)	E	No	Not likely to adversely affect
Colorado pikeminnow (*Ptychocheilus lucius*)	E	Yes	Not likely to adversely affect
Cui-ui (*Chasmistes cujus*)	E	No	Not likely to adversely affect
Desert dace (*Eremichthys across*)	T	Yes	Not likely to adversely affect
Greenback cutthroat trout (*Onchorhynchus clarki ssp. Stomais*)	T	No	Not likely to adversely affect
Hiko White River springfish (*Crenichthys baileyi grandis*)	E	Yes	Not likely to adversely affect
Humpback chub (*Gila cypha*)	T	Yes	Not likely to adversely affect
Hutton tui chub (*Gila bicolor*)	E	No	Not likely to adversely affect
Independence Valley speckled dace (*Rhinichtys osculus*)	E	No	Not likely to adversely affect
Kendall warm springs dace (*Rhinichyts osculus thermalis*)	E	No	Not likely to adversely affect
Lahontan cutthroat trout (*Onorhynchochos clarkia henshawi*)	T	No	Not likely to adversely affect
Lost River sucker (*Deltistes luxatus*)	E	Yes	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Pahranagat roundtail chub (*Gila robusta jordani*)	E	No	Not likely to adversely affect
Pahrump poolfish (*Empetrichthys latos*)	E	No	Not likely to adversely affect
Pallid sturgeon (*Scaphirhynchus albus*)	E	No	Not likely to adversely affect
Railroad Valley springfish (*Crenichthys nevada*)	T	Yes	Not likely to adversely affect
Razorback sucker (*Xyrauchen texanus*)	E	Yes	Not likely to adversely affect
Shortnose sucker (*Chasmistes breviirostris*)	E	Yes	Not likely to adversely affect
Warner sucker (*Catostomus warnerensis*)	T	Yes	Not likely to adversely affect
White River spinedace (*Lepidomena albivalis*)	E	Yes	Not likely to adversely affect
Whiteriver springfish (*Crenichtys baileyi baileyi*)	E	Yes	Not likely to adversely affect
Plants			
Autumn buttercup (*Ranunculus aestivalis acriformis*)	E	No	Not likely to adversely affect
Barneby reed-mustard (*Schoenocrambe barnebyi*)	E	No	Not likely to adversely affect
Blowout penstemon (*Penstemon haydenii*)	E	No	Not likely to adversely affect
Clay phacelia (*Phacelia argillacea*)	E	No	Not likely to adversely affect
Clay reed-mustard (*Schoenocrambe argillacea*)	T	No	Not likely to adversely affect
Desert yellowhead (*Yermo xanthocephalus*)	T	Yes	Not likely to adversely affect
Heliotrope milk-vetch (*Astragalus montii*)	T	Yes	Not likely to adversely affect
Howell's spectacular thelypody (*Thelypodium howelli ssp. spectabillis*)	T	No	Not likely to adversely affect
Jones cycladenia (*Cycladenia humilis var. jonesii*)	T	No	Not likely to adversely affect
Kodachrome bladderpod (*Lesquerella tumulosa*)	E	No	Not likely to adversely affect
Last chance townsendia (*Townsendia aprica*)	T	No	Not likely to adversely affect
San Rafael cactus (*Pediocactusdes depainii*)	E	No	Not likely to adversely affect
Shrubby reed-mustard (*Schoenocrambe suffrutescens*)	E	Yes	Not likely to adversely affect
Slender Orcutt grass (*Orcuttia tenuis*)	T	Yes	Not likely to adversely affect
Slickspot peppergrass (*Lepidium papilliferum*)	T	Yes	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Uinta Basin hookless cactus (*Sclerocactus wetlandicus*)	T	No	Not likely to adversely affect
Ute ladies'-tresses (*Spiranthes diluvialis*)	T	No	Not likely to adversely affect
Webber ivesia (*Ivesia webberi*)	T	Yes	Not likely to adversely affect
Western prairie fringed orchid (*Platanthera praeclara*)	T	No	Not likely to adversely affect
Wright fishhook cactus (*Sclerocactus wrightiae*)	E	No	Not likely to adversely affect
Whitebark pine (*Pinus albicaulis*)	T	No	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Attachment B. Utah Prairie Dog (*Cynomys parvidens*) Conservation Measures to be Implemented on BLM Lands in Conjunction with the 2025 GRSG RMPA.

In their 2015 Biological Assessment (BA; BLM 2015), the BLM committed to implementing the following conservation measures when planning and implementing management actions in areas where greater sage-grouse and Utah prairie dog habitat overlap. These conservation measures will continue to be implemented under the 2025 GRSG RMPA:

- Under the authority of BLM laws, regulations, and policies, where Utah prairie dog habitat overlaps with greater sage-grouse habitats, it is the intent of these land use plan amendments to co-manage for the benefit of both species. For example, when applying various management actions and objectives that are applicable specifically to greater sage-grouse but could affect Utah prairie dog habitat, landscapes would be managed for both species. Examples of some of these BLM management actions and objectives are included in over-arching management in GRSG habitat (e.g., Objective GRSG-3, MA-GRSG-4), vegetation management (e.g., Objective VEG-1, MA-VEG-1), and fire management (e.g., MA-FIRE-3, MA-FIRE-4).

- The BLM commits to include co-management language that will help guide planning and implementing management actions in areas where greater sage-grouse and Utah prairie dog habitat overlaps. This co-management language is included in the following Management Actions and Objectives in the final BA:

    - Objective GRSG-2
    - Objective GRSG-4
    - MA-GRSG-3
    - MA-GRSG-5
    - MA-VEG-4

    Co-management language will be included in the following Management Actions and Objectives in the BLM's Record of Decision:

    - Objective GRSG-3
    - MA-GRSG-4
    - MA-GRSG-6
    - Objective VEG-1
    - MA-VEG-1
    - MA-FIRE-3
    - MA-FIRE-4

- There is a suite of project-level conservation measures that will minimize impacts to Utah prairie dogs that are already in place in existing biological assessments, plans, policies, and regulations (see Attachment E *in* the BA). The following conservation measure from the BA for this proposed action describes this as follows:

- The original biological assessment impacts analysis included conservation measures from various existing land use plans and conservation measures from existing, site-specific projects, as well as their associated Section 7 consultations for Utah prairie dog. The conservation measures from the existing land use plans and land use plan Section 7 consultations have been more clearly identified in Attachment E of the BA. The conservation measures from the existing site-specific projects were illustrative of the types of site-specific conservation measures that may be used during implementation of Utah prairie dog conservation actions.

Literature Cited

Bureau of Land Management. 2015. Biological Assessment for the Utah Greater Sage-Grouse Land Use Plan Amendment and Final Environmental Impact Statement. May 20, 2015. 186 pp.

Appendix 8

Summary of Public Comments on the Proposed Changes Between Proposed RMPA and ROD

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Appendix 8. Summary of Public Comments on the Proposed Changes Between Proposed RMPA and ROD

Consistent with 43 CFR 1610.2(f)(5) and 1610.5-1(b), significant changes to the proposed management direction in the Proposed Resource Management Plan (RMP) Amendment were published for public comment on September 2, 2025, for a 30-day comment period, which ended on October 3, 2025. This was a narrow comment period focused specifically on five significant changes to management direction from what was published in the Proposed RMP Amendment on November 15, 2024. These changes included:

- Substantive edits to the adaptive management language in the Proposed RMPAs for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming to better align with state policies and programs to manage sage-grouse populations.
- Removal of the designation for Priority Habitat Management Areas (PHMA) with limited exceptions as a distinct subset of PHMAs to improve consistency with state and local plans.
- Changing the seasonal habitat benchmark for perennial grass height during nesting/early brood rearing from a quantitative standard to a qualitative standard in the Nevada/California and Idaho Proposed RMPAs.
- Updating the habitat management area boundaries for the Utah Proposed RMPA to more closely align with the State of Utah Greater Sage-Grouse Conservation Plan (2019).
- Changing the allocation for major rights of way in general habitat management areas (GHMA) in the Nevada Proposed RMPA from avoidance to open to align more closely with how GHMA is managed in BLM California.

The BLM received approximately 170 unique, substantive comments on these changes. Only comments on the first three items are relevant to the Idaho plan. Therefore, only comments pertinent to the first three changes are summarized below along with the BLM's responses.

8.1 Adaptive Management (General)

- **Comment Summary:** The BLM should update the RODs with language explaining how it will address inconsistencies between the adaptive management provisions in existing state plans and those described in the FEIS. The Proposed Changes document does not clarify how these inconsistencies will be resolved.

  Response: States have ownership over managing GRSG populations and therefore lead the collection of GRSG population monitoring data and determination of population status (e.g., increasing, decreasing, or stable). The States' population monitoring is important for informing effective GRSG habitat management on BLM-administered lands. The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the Approved Amendment. Every state in the Task Force supports this management approach. Further, the BLM's adaptive management approach identifies the need for close coordination with states in implementing this framework, including the development of interagency teams to utilize best

available science to coordinate with state authorities on analysis units, population status, thresholds, causal factors, and responses. During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands.

- **Comment Summary:** Commenters provided specific adaptive management recommendations in tracked-change format within their letters.

  Response: The BLM carefully considered the proposed edits to adaptive management language and adopted them as appropriate.

8.2 ADAPTIVE MANAGEMENT- HABITAT THRESHOLDS

- **Comment Summary:** The BLM should clarify how habitat thresholds will be deactivated and how habitat threshold activation due to wildfire is addressed.

  Response: Threshold deactivation is discussed in the adaptive management appendix, *Habitat Threshold Deactivation.* Habitat threshold activation due to wildfire is discussed in the adaptive management appendix, *Habitat Thresholds due to Wildfire*. During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address implementation of this framework.

- **Comment Summary:** The BLM should consider routine and non-routine operations for utility operators when identifying threshold responses, as RODs do not have utility operations exemptions. RODs should include specific language that explicitly permits routine ROW maintenance, including service road access, as part of valid existing rights, regardless of threshold response status.

  Response: The BLM clarified in the adaptive management appendix, *Exceptions to Threshold Responses,* that ROW operations and routine maintenance may be an exception to threshold responses and will follow the regulations at 43 CFR 2801 and the terms of the ROW authorization.

8.3 ADAPTIVE MANAGEMENT- CAUSAL FACTOR ANALYSIS

- **Comment Summary:** Causal Factor Analysis has been misused to restrict other development activities, such as grazing allotments, and the Proposed Changes document fails to address this issue. Causal Factor Analysis should place greater emphasis on natural causes of habitat degradation, including predation and large wildfires. Commenters proposed specific text revisions in tracked-change format within their letters. (See Letter 149 from Eureka County, NV, and Letter 191 from Humboldt County, NV.)

  Response: The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the Approved Amendment. The evaluation of causal factors includes consideration of how natural factors contribute to the degradation of sage-grouse habitat. As stated in the adaptive management appendix, *Causal Factor Analysis,* formal CFA reports will cover aspects such as habitat conditions, factors causing declines and threshold activation, and recommendations. In cases of large wildfires, a Rapid Assessment CFA can be prepared. Actions taken to implement the CFA recommendations by the BLM will require NEPA. In the case of grazing allotment based actions, the BLM will not take a management action related to grazing unless it is

determined that grazing is the causal factor of the threshold being met. Grazing allotment renewal is also established as one of the exceptions to threshold responses, and allotments may be renewed while a CFA is ongoing, which is clarified in the final adaptive management language. The evaluation of causal factors includes consideration of how natural factors contribute to the degradation of sage-grouse habitat. In addition, wildfire is further addressed in the adaptive management appendix, *Habitat Thresholds Due to Wildfire.*

- **Comment Summary:** When conducting Causal Factor Analysis, other sagebrush-obligate species, such as mule deer and pygmy rabbits, should also be considered as potential indicator species for sagebrush biomes.

  Response: The BLM will consider the best available information in completing a causal factor analysis. As stated in the adaptive management appendix, *Causal Factor Analysis,* the BLM will consider habitat conditions and trends, which may include all sagebrush-dependent species.

8.4 ADAPTIVE MANAGEMENT- TARGETED EARLY WARNING SYSTEM (TAWS) AND POPULATION THRESHOLDS

- **Comment Summary:** TAWS is an outdated system that is error-prone and fails to deliver adequate management outcomes. State agencies are better equipped to handle adaptive management and monitoring. The BLM should prioritize supporting state agencies and fostering greater collaboration between the BLM and state agencies.

  Response: TAWS is currently the best available science, developed in close coordination with all state agency biologists and the Western Association of Fish and Wildlife Agencies. The BLM will continue to evaluate the best available science when making management decisions for sage-grouse habitat. The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the Approved Amendment. The revised Adaptive Management approach supports strong collaboration with state agencies and provides for verification of thresholds, see *Population Threshold Verification*.

- **Comment Summary:** Conversely, the BLM already employs adaptive management methods, including TAWS, which are informed by state agency data. However, the Proposed Changes document indicates that states may be granted authority to override BLM management actions, which would conflict with FLPMA.

  Response: The BLM is committed to close coordination with states in making management decisions for sage-grouse habitat and ensuring that information about sage-grouse populations is accurate. This does not mean that states may override the BLM's management actions on BLM-administered lands. The Adaptive Management Action states, "BLM will coordinate with State GRSG authorities regarding management decisions made in response to adaptive management thresholds and subsequent causal factor analyses and will make decisions for the management of BLM managed surface lands and mineral estate." This is further explained in the Adaptive Management Responses Section, specifically it explains the BLM will implement adaptive management responses.

- **Comment Summary:** The BLM should clarify how population thresholds are addressed.

  Response: The adaptive management appendix addresses population thresholds.

8.5 ADAPTIVE MANAGEMENT- STATE POLICIES AND PROGRAMS

- **Comment Summary:** The BLM should adopt the Nevada adaptive management process for the Nevada/California RMP amendment. The BLM should adopt state specific policies used by the State of Nevada, including input from Sagebrush Ecosystem Technical Team (SETT), and following the Nevada's Conservation Credit System (CCS). Nevada commenters expressed concern that the BLM had adopted Wyoming's Adaptive Management Approach, while subjecting Nevada to additional regulations, despite Nevada having an equally robust GRSG conservation plan. The BLM should develop a method to resolve discrepancies between state level plans.

  Response: In NV/CA planning region, there will be an implementation-level MOU with the State of NV to address any potential inconsistencies between the State of Nevada's adaptive management plan and the BLM's adaptive management framework. This language has been added to the Approved RMP Amendment Adaptive Management section.

- **Comment Summary:** The BLM should establish a process which would resolve discrepancies between state level plans that are not aligned with BLM's management actions, and the Proposed Changes document does not address these shortcomings.

  Response: During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands. Key elements of the BLM adaptive management approach are detailed in the appendix and can be used to assess the applicability of state level plans in meeting BLM management actions,

- **Comment Summary:** Adaptive Management relies heavily on cooperation between state agencies and BLM. BLM should support state agencies and maintain a working and cooperative relationship and ensure that state-led processes are fully integrated into federal decision-making.

  Response: States have ownership over managing GRSG populations and therefore lead the collection of GRSG population monitoring data and determination of population status (e.g., increasing, decreasing, or stable). The States' population monitoring is important for informing effective GRSG habitat management on BLM-administered lands. The BLM is committed to close coordination with states in making management decisions for sage-grouse habitat. Recall that the overall goal of this plan amendment effort as well as many objectives and management actions are explicit in about "coordination and cooperation with state wildlife agencies and appropriate state authorities." During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands.

8.6 ADEQUACY OF NEPA AND LUP COMPLIANCE

- **Comment Summary:** The BLM did not adhere to agency guidelines, NEPA requirements, or other federal laws when developing the FEIS or during the protest resolution process. The Proposed Changes document does not adequately address these shortcomings.

  Response: The BLM has complied with the requirements of NEPA, FLPMA, and its land use planning regulations in developing the approved RMP amendments.

- **Comment Summary:** The Proposed Changes document introduces significant changes to the FEIS that fall outside the scope of the original FEIS analysis and therefore require additional NEPA review. Specifically, the BLM failed to analyze the adaptive management approach in the proposed changes document and that adaptive management approach fails to provide that project level NEPA for changes in management direction will occur. Furthermore, the limited scope of the Proposed Changes comment period did not provide an opportunity to seek clarification on these discrepancies.

  Response: The BLM has carefully reviewed each of the proposed changes to determine if they would result in significant effects outside the range of effects analyzed in the Proposed RMPA/Final Environmental Impact Statement (EIS). The BLM has determined that the analysis described in the Proposed RMPA/Final EIS is inclusive of the effects that would occur because of these changed management actions and supplemental analysis under the National Environmental Policy Act is not needed. Specifically, the proposed adaptive management approach for Idaho, Montana/Dakotas, Nevada/ California and Utah is within the spectrum of alternatives analyzed in the FEIS. The BLM analyzed the proposed adaptive management approach for WY in Alternative 2 of the FEIS. The BLM will also comply with NEPA as appropriate during implementation of the adaptive management approach, as explained in the Adaptive Management Response Section of the Adaptive Management Appendix.

  Moreover, consistent with the BLM's planning regulations (43 CFR 1610.5-1; 43 CFR 1610.2) the BLM provided a 30-day public comment period for the public to comment on significant changes to the proposed amendment that was previously issued in November 2024. In the proposed changes document available to the public, the BLM identified changes and provided an explanation for the changes- including a description of the governor's concerns with the proposed adaptive management approach. The BLM also provided specific changes in management direction associated with the elimination of PHMA with limited exceptions in Table 1 and provided state-specific maps identifying areas where PHMA with limited exceptions is removed to allow the public to compare the proposed changes to those issued in the November 2024 proposed amendment.

8.7 PRIORITY HABITAT MANAGEMENT AREA AND AREAS OF CRITICAL ENVIRONMENTAL CONCERN

- **Comment Summary:** PHMA with Limited Exceptions was developed as a mechanism to provide protection for GRSG without formally designating ACECs. By removing PHMA with Limited Exceptions, the BLM loses the ability to designate protected habitat for GRSG. Therefore, the BLM should consider either designating additional ACECs or maintaining PHMA with Limited Exceptions.

  Response: The BLM considered areas for potential designation as Areas of Critical Environmental Concern (ACECs) for GRSG habitat in this land use planning process. These areas were first identified through both external nominations and internal rangewide and state-specific review processes that were subsequently thoroughly evaluated by BLM to determine if they met the ACEC relevance and importance criteria identified in 43 CFR 1610.7-2 (refer to Appendix 5, Areas of Critical Environmental Concern for Greater Sage-Grouse Habitat, in the Final EIS). Specifically, in the EIS for this RMP Amendment, in compliance with 43 CFR 1617.7-2 and ACEC policy, the BLM has evaluated the area found to have relevance and importance and proposed the area for ACEC designation in the Alternatives. The BLM has also analyzed the effects of the management direction to the potential ACEC area under all of the alternatives, including the Proposed RMP Amendment.

Following the Proposed RMP Amendment, several states informed the BLM that they found the identification of and additional protections in the PHMA with limited exceptions to be unnecessary, potentially inconsistent with state and local plans, policies, or programs (including because those states thought there could be confusion as to whether there would be two or three habitat management area designations), and a primary reason the states could not support the Proposed RMP Amendment. In consideration of the states' concerns related to the PHMA areas with limited exceptions, and in order to allow the BLM and the states to move forward together, the BLM has removed the PHMA with limited exception areas in the Approved RMP Amendment.

The BLM evaluated areas proposed for designation as ACECs, and as explained in the ROD, determined the management direction in the approved amendment will provide protection to the relevant and important values of the potential ACEC area thus designation as an ACEC is not necessary.

- **Comment Summary:** The BLM should categorically exclude both wind and utility-scale solar development from PHMA as described in PHMA with limited exceptions, without relying on micro-siting as a form of mitigation. Distributed or co-located solar projects could be considered in non-habitat areas; however, utility-scale projects are incompatible with sage-grouse conservation in core habitats.

  Response: The BLM has carefully considered how to balance multiple uses in the planning area. Utility scale wind and solar are excluded from PHMA, with narrow exception criteria designed to protect sage-grouse habitat from direct and indirect impacts.

8.8 NESTING HABITAT BENCHMARKS

- **Comment Summary:** The BLM should incorporate the following sentence into footnote No. 6: Assessments of suitable Nesting/Earling Brood Rearing seasonal habitat will collectively consider all applicable Table 4-1 indicators and benchmarks along with other relevant site conditions metrics including forage utilization (see Conway et al. 2025).

  Response: The footnote is further explanation on 'suitable nesting cover' and references two studies (i.e., Coates et al. 2017a, Dahlgren et al. 2019) that reported different heights by ecological site description and vegetation type (perennial grass, perennial forb, residual grass). These references, therefore, provide concrete examples on documented variation in perennial grass, perennial forb, and residual grass height. Perennial grass and forb heights are vegetation characteristics that sage-grouse select for nesting or are associated with increased nest success based on the scientific literature. Utilization itself is not a habitat indicator for sage-grouse because utilization can result in many different habitat condition outcomes, including the pre-grazing condition of the vegetation, and has not been shown in the literature to be a variable discernable by sage-grouse for nest selection or success. During rangeland health assessments utilization is considered when making a determination of meeting Land Health Standards.

- **Comment Summary:** The BLM should consider removing quantitative grass height indicators because these indicators are rigid, one-size-fits-all, and not adaptable to site-specific conditions. Instead, the BLM should rely on Conway et al.'s 2025 publication as justification for this change, rather than publications that support a quantitative indicator.

Response: The BLM relies on the best available science in determining suitable nesting habitat benchmarks for sage-grouse, including Conway et al. 2025. As stated in the approved RMP amendment, Idaho and NV/CA use a qualitative standard.

- **Comment Summary:** Conversely, the quantitative grass height indicator should remain as the Nesting Habitat Benchmark because there is ample evidence and data supporting the positive correlation between vegetation height and nesting and brood success. Additionally, this quantitative benchmark already accounts for site-specific variability and complies with the existing habitat assessment framework and standards. The commenters also allege the BLM failed to evaluate the impacts in the EIS of the proposed change of the perennial grass height indicator to "suitable nesting cover," and that this change makes it unlikely that a minimum science-based guideline will be implemented for site-specific grazing authorizations.

  Response: In response to concerns raised by the Governor's consistency review about the use of best available science, BLM Nevada and California and BLM Idaho changed the benchmark for the perennial grass height indicator from a specific height to "Suitable nesting cover". "Adequate nesting cover" from Alternative 2 was analyzed in the FEIS but clarification was added that "Suitable nesting cover" would be based on best available science and that vegetation heights may differ by ecological site potential and vegetation type, as reported by several more recent studies (Coates et al. 2017a, Dahlgren et al. 2019). Furthermore, BLM acknowledged that benchmarks would continue to be updated with evolving science.

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Appendix B

Lek Buffer Management Direction

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Appendix B. Lek Buffer Management Direction

This table identifies the lek buffer management direction that will be applied.

Approved RMP Amendment Lek Buffer Management Direction
Applying Lek Buffer-Distances When Approving Actions **Buffer Distances and Evaluation of Impact on Leks** Evaluate impacts to active and pending active leks (Cook, et al. 2022; **Appendix 4**) within HMA from actions requiring NEPA analysis. In addition to any other relevant information determined to be appropriate (e.g. State wildlife agency plans), the BLM will assess and address impacts from the following activities using the lek buffer-distances as identified in the USGS Report, *Conservation Buffer Distance Estimates for Greater Sage-Grouse - A Review* (Manier et al. 2014). The BLM will apply the lek buffer-distances specified as the lower end of the interpreted range in the report unless justifiable departures are determined to be appropriate (see below). The lower end of the interpreted range of the lek buffer-distances is as follows: • Linear features (roads)[1] within 3.1 miles of leks • Infrastructure related to energy development within 3.1 miles of leks. • Tall structures (e.g., communication or transmission towers, transmission lines) within 2 miles of leks. • Low structures (e.g., fences, rangeland structures) within1.2 miles of leks. • Surface disturbance (continuing human activities that alter or remove the natural vegetation) within 3.1 miles of leks. • Noise and related disruptive activities including those that do not result in habitat loss (e.g., motorized recreational events) at least 0.25 miles from leks. Justifiable departures to decrease or increase from these distances, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations, state regulations) may be appropriate for determining activity impacts. The USGS report recognized "that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range". The USGS report also states that "various protection measures have been developed and implemented… [which have] the ability (alone or in concert with others) to protect important habitats, sustain populations, and support multiple-use demands for public lands". All variations in lek buffer-distances will require appropriate analysis and disclosure as part of activity authorization. In determining lek locations, the BLM will use the most recent lek data available from the state wildlife agency.

[1] Roads are linear routes declared as a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use. Roads do not include trails, primitive roads, temporary routes, or administrative routes with maintenance intensity of 0 or 1 (2015 ARMPA ROD).

Approved RMP Amendment Lek Buffer Management Direction

For Actions in GHMA

- The BLM will apply the lek buffer-distances identified above as required conservation measures to fully address the impacts to leks as identified in the NEPA analysis. Impacts should first be avoided by locating the action outside of the applicable lek buffer – distance(s) identified above.
- The BLM may approve actions in GHMA that are within the applicable lek buffer distance identified above only if:
  - Impacts should first be avoided by locating the action outside of the applicable lek buffer-distance(s) identified above.
  - If it is not possible to relocate the project outside of the applicable lek buffer-distance(s) identified above, the BLM may approve the project only if:
    - Based on best available science, landscape features, and other existing protections, (e.g., land use allocations, state regulations), the BLM determines that a lek buffer-distance other than the applicable distance identified above offers the same or a greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; **or**
    - The BLM determines that impacts to GRSG and its habitat are minimized such that the project will cause minor or no new disturbance (ex. co-location with existing authorizations); **and**
    - Any residual impacts within the lek buffer-distances are addressed through mitigation measures, as outlined in the Mitigation Strategy (Appendix F).

For Actions in PHMA and IHMA

- The BLM will apply the lek buffer-distances identified above as required conservation measures to fully address the impacts to leks as identified in the NEPA analysis. Impacts should be avoided by locating the action outside of the applicable lek buffer-distance(s) identified above.
- The BLM may approve actions in PHMA and IMHA that are within the applicable lek buffer distance identified above only if with input from state fish and wildlife agency, it determines, based on best available science, landscape features, and other existing protections, that a buffer distance other than identified above offers the same or greater level of protection for GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area.
- Range improvements which do not impact GRSG, or, range improvements which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats, meet the lek buffer requirement.

The BLM will explain its justification for determining the approved buffer distances meet these conditions in its project decision.